JANUARY, 1958

American Engineer

IN THIS ISSUE . . .

- **Needed: Faith in Our Technical Talent**

  By
  S. B. Spangler, Rear Admiral,
  United States Navy

Admiral Spangler

Public Relations and the Engineer by Asher B. Etkes • News of the Spring Meeting • National Engineers' Week Report • Latest Coverage of Wage-Hour Court Decisions and other Washington News

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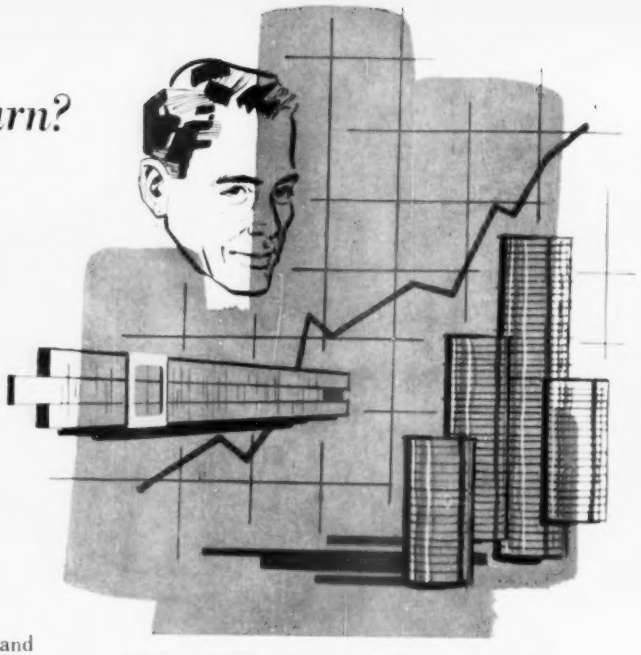
what do engineers earn?

PROFESSIONAL ENGINEERS INCOME & SALARY SURVEY–1956



Here is the latest in a continuing series of Income and Salary Surveys of the engineering profession made by the National Society of Professional Engineers. Started in 1952, the Surveys are part of a long-range income and salary study program. This third biennial Survey presents up-to-date information gathered from engineers throughout the country, in all the engineering fields. The Survey gives a detailed picture of engineer earnings by year of entry into the profession, by geographical region, by type of employer, by engineering specialty—and by a variety of other categories. Salary and income data from more than 17,000 registered, professional engineers were studied for this newest Survey report. Published in handy booklet form, the Survey provides a documented study at all levels of professional experience. Comparative earning figures from the 1952 and 1954 Surveys make it possible to evaluate broad engineering income and salary trends for the period 1952-56. A vital research study for engineers, industrial executives, personnel officers, and all others who want the facts on engineer earnings.

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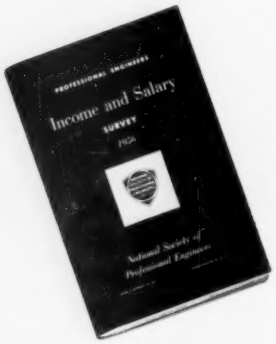

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In reality, failure is an opportunity, an opportunity to begin again more intelligently.

—Henry Ford

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● SPECIAL ARTICLES

Needed: Faith in our Technical Talent 11
By S. B. Spangler, Rear Admiral, United States Navy

Public Relations and the Engineer 16
By Asher B. Etkes, Asher B. Etkes Associates, Inc.

Sputnik Discussion Planned for Spring Meeting, Feb. 13-15 24

Pres. Eisenhower Salutes National Engineers' Week 26

Jenkins-Keogh and the American Thrift Assembly 30
By Robert C. Vogt, P.E.

● REGULAR FEATURES

Letters 4
Professional News Briefs 6
Engineering Employment Practices Digest 15
From Washington 19
NSPE Believes 33
With Our Members 34
Strictly Business 43

Professional Directory 36, 37, 38, 39, 40
New Literature 41
Classified 45
Advertisers' Index 45
What's New—New Products of Interest 50

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Letters to the Editor

New Unit System . . .

Dear Editor:

Now that our politicians are beginning to notice the engineers, is it not time for the engineers to ask for a modern system of units? When are we going to bury the horsepower, the gallon, the pound, the rod pole or perch, the acre, the feet and inches, etc., etc., to which engineers are legally bound? Just imagine the modern banker trying to do business on the Roman numeral system. How can the American engineer compete with the Russian engineer when handicapped with an obsolete system of units?

R. B. Macfarlane,
Richmond, Va.

AE Error . . .

Dear Editor:

. . . I was pleased to see papers in the AE which were presented originally at the Dallas meeting in June as a part of the Young Engineers' "Symposia."

I realize that lack of space and other considerations make it necessary to delete certain portions of papers. I should like, however, to call your attention to a rather serious error resulting from deletions in my article "Why Young Engineers Don't Want to Teach."

The last paragraph of the first column on page 46 leaves the impression in the third sentence, that present salaries of full professors are about $18,000. This, of course, is far from true since they are more nearly half that amount or less. If you will refer to my manuscript you will find that I was trying to make the point . . . that the starting salary for young instructors should bear a ratio of one-to-four to the salaries of full professors, which situation did exist twenty years ago. At this ratio, the full professor's salary should be about $18,000 but it certainly is not. . . .

Robert E. Stiemke,
Director, School of
Civil Engineering,
Georgia Institute of Technology,
Atlanta, Ga.

Records . . .

Dear Editor:

Nothing could be further from the truth than W. B. Williams theory that incorporated engineers would take better care of their records than individuals.

The individual engineer cherishes the plans, specifications, reports and other documents on which he has spent so much labor and frequently keeps them long after they have ceased to have any value.

The corporation organized primarily for profit whose personnel is constantly changing, turns its records over to some filing clerk and the records soon disappear. I speak from experience.

Milton H. Blez, P.E.,
Bronxville, N. Y.

What Shortage?

Dear Editor:

Speak up, NSPE! There is a great need to do something for the engineering profession now, and the NSPE is in the best position to do it. . . .

We have enough engineers! Some people are suggesting that additional young people be persuaded to become engineers and scientists. This is very discouraging to those already in the field, since there are already so many of us who are either not employed as engineers at all, or are employed as engineers but spend only one-fourth or one-half of our time on (professional) work. We are poorly utilized, mainly because of . . . over supply.

Many engineers are working well under their ability in skill and experience. Many have to do extensive clerical work of one form or another, or other work such as production, expediting, etc. Many good engineers are unemployed! Many are holding jobs that are not challenging enough to be interesting and satisfying. Many engineers leave engineering in order to make a moderate living. In short, we are and have been in a condition of over-supply.

You in the Society should speak up vigorously, telling . . . these facts as engineers generally know them:

1. We have enough engineers and scientists.
2. To obtain more from engineers, a better utilization of them is needed.
3. To obtain more research, the main thing needed is a desire to pay engineers and scientists to do it.
4. Do not persuade young people to enter a poorly paid profession that would become tremendously over-crowded and offer even poorer opportunities than now.
5. The present supply of engineers and scientists is more than adequate. The supply is increasing and will increase more rapidly if the demand increases.

(Name withheld by request.)

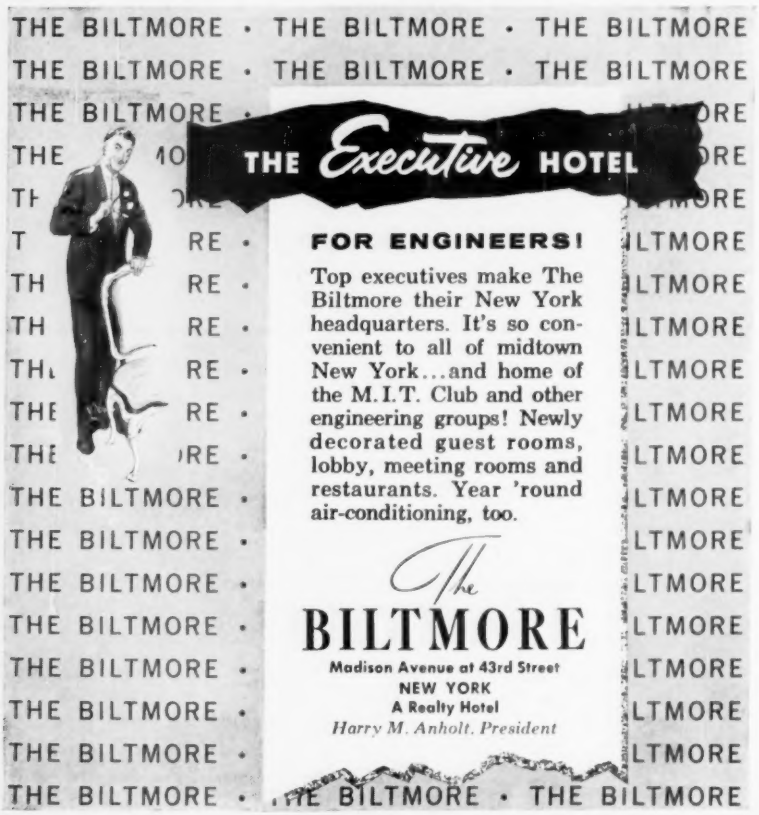
Better Utilization . . .

Dear Editor:

In the capacity of spokesman for NSPE, your publication purports to be professional but in some respects . . . latest issues have done more to tear down than to build up the profession. Page 19 of the October issue makes reference to a possible dilution in professional requirements as a means of obtaining new members. Need I remark that Gideon's band of 300 men had resolution and accomplished their purpose; lacking vision, a membership of 400,000 can accomplish no more than 42,000.

Time was when a graduate engineer could maintain a comfortable margin over labor in earnings. Today, the electrical engineer is fortunate to be able to live in the same block with an electrician. Were we to suffer a ten per cent recession in the gross national product, graduate engineers would be running out of our ears. . . .

The graduate engineer is an inferior draftsman because of limited training, but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in my youth it was said that he should do drafting as apprenticeship for engineering. I lived reasonably well for twenty-five years having only a nodding acquaintance with the board, realizing that an active mind, trained for accomplishment, would atrophy if held back by the hand's speed. . . .

Being at last qualified, I believe that a society composed solely of professional engineers might offer the long-hoped-for opportunity for professional development. Apparently, I have been fooled again, for NSPE seems willing to limit a professional engineer's earnings to the output of his hands. If a man is destined to spend his life on the board, why should he waste four or five years in college? The engineer devises the means of utilizing power to multiply man-hours, thereby making it possible for a moron to out-produce and excel in earning power over the intelligent. The AFL and CIO have protected the moron from exploitation, but who protects the engineer? A high starting salary is offered as sucker bait, and by the time he learns of the small advancement to be hoped for, there are two or three new crops of graduates, and he is hooked.

The ISPE recently was advised through its publication of an ingenious method of relieving the "engineer shortage" which is to be used by the Illinois Highway Department; they plan to use technicians for sub-professional work. On the basis of many years experience in this line, the writer concludes that eighty per cent of mechanical trades and about half of all other detailed drafting is a waste of engineering talent. A high-school graduate with six months' specialized training for a career in drafting will do such work faster and better.

You refuse to espouse an economy of scarcity, preferring to sing management's song of "shortage," while professional societies at all levels ignore alleged derelictions from the code of ethics. Do you dare to face a fact put into words recently by a friend in management: "Why should I hire career draftsmen when engineers are available at the same price?"

E. F. Downs, P. E.,
La Grange Park, Ill.

► ***Editor's Note:*** **One of NSPE's major objectives over the years has been better utilization of engineering manpower. Executive Research Survey Number Two prepared by NSPE under the direction of the PECBI, which had its first printing in March, 1952, deals specifically with this problem. It is entitled, *How to Improve the Utilization of Engineering Manpower.* Recently, at the fall meeting in Bismarck, N. D., NSPE expressed opposition to any crash program for training engineers and scientists.**

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It surprises many people to learn that the average age of the men who respond to our advertisements is closer to forty than to twenty. But it's not hard to understand why this is true!

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Why does this pathetic pattern appear in so many promising careers?

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(Circle 2 on Inside Back Cover)

PROFESSIONAL NEWS IN CAPSULE FORM

A Roundup of Late Events for Professional Engineers

Building Research Study Underway By BRAB, BRI

A comprehensive program to stimulate and correlate basic building research on a national level is being undertaken by the Building Research Advisory Board and the Building Research Institute, it has been announced.

"The ultimate object," Mr. Scheick said, "is to create a complete building science that will lead to better design, better construction, better materials, and a high standard of economic efficiency for the construction boom forecasted for the 1960's.

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Capt. Dingley Elevated to Grade of Fellow in AIEE

Edward N. Dingley, Jr., staff research engineer, Electronic Communications, Inc., St. Petersburg, Florida, has been elevated to the honorary grade of Fellow by the American Institute of Electrical Engineers "in recognition of his many contributions in the field of electrical engineering to the defense of the United States," it has been announced.

Captain Dingley (USNR-inactive) served on active duty during World War II in the Bureau of Ships, Navy Department, San Diego, California. A member of NSPE, he was engaged in electronic research and development for the Federal Government for more than twenty-seven years prior to his retirement in July, 1957.

❁

Appoint Evans to State Executive Committee

Clarence Evans has been appointed by Delaware Governor J. Caleb Boggs to the State's newly-established Executive Committee.

A national director of NSPE, Mr. Evans will represent all the small professional boards in the State as a member of this Committee. He is chairman of the Delaware State Board of Registration for Professional Engineers and Land Surveyors.

"Good man. He stays rooted to his chair."

Scientific Reappraisal Planned in New Jersey

Following the request of President Eisenhower that Boards of Education reappraise their schools' science courses, the Manville, N. J., School Board was among the first in the Nation to take this advice with the recent appointment of Michael S. Kachorsky to head a special committee to look into the matter.

NSPE member Kachorsky, a borough engineer, was authorized to choose the members of his committee, with emphasis on a scientific background rather than education.

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Clemson College Broadens Engineering Curricula

Significant changes to further strengthen and broaden Clemson College's engineering curricula have been approved by the school's Educational Council.

Major revision is the elimination of all traditional freshman surveying courses in favor of a required history, "Western Civilization." Surveying as an advanced course, if wanted, will be given in the sophomore year, following completion of freshmen mathematics work.

"The changes," announces Dean J. H. Sams, School of Engineering, "conform with recommendations of the American Society for Engineering Education." The society advocates a "broad, general education" as well as strong courses in engineering sciences and advanced synthesis and engineering analysis.

Clemson revisions, says Dr. Sams, reduce some of the technology courses —such as freshman surveying—and include additional social science and cultural subjects. Advanced courses in synthesis and design have been added "to develop the young engineer's creative capacity."

Engineers Try to Recruit Employers in New Twist

Fourteen young engineers and scientists recently reversed recruiting procedure in an attempt to find employment.

Failing to find any demand for their services, these men rented a hotel room in the Statler Hotel in New York City at the same time of the ASME annual meeting and invited potential employers to visit them.

The men, thirty to forty years old, were laid off when the Turbomotor Division of Curtiss-Wright Corp., Princeton, N. J., ceased operation. Most had advanced degrees, and from seven to nineteen years experience in research, design, and construction. They had earned from $9,000 to $15,000 annually.

They said that only four companies had recruiters at the ASME meeting as compared with fifty a year ago.

One engineer had this to say: "I just talked to one of the recruiters. He had a sheaf of applications. He was mildly interested in some of us, but said he could be 'very selective' because so many are available."

The men were still unemployed at last report.

Engineering Enrollment Up in Canadian Colleges

The Engineering Institute of Canada has recently released the results of its annual survey of engineering registration at Canadian universities and colleges. The tabulations have been prepared from lists obtained direct from the university registrars, and they were compiled at Institute Headquarters in Montreal.

As usual, the figures are interesting, and close examination of them reveal some significant facts. Total enrolment in engineering courses in Canada shows an increase of twelve per cent, which is almost exactly the same rate of advance as one year ago. In actual numbers, 14,247 students are now studying engineering, as compared with 12,723 in the fall of 1956.

Of more importance perhaps are the indications provided by the figures for the new freshman intake. These show an over-all upward trend of thirteen per cent.

A comparison of the popularity of the different courses, as disclosed by the new survey, shows no important change. Civil remains first choice in total enrollment with 1935 students, followed by electrical with 1539, and mechanical with 1355. This order is the same as last year, with electrical pulling away slightly from mechanical as compared with the 1956 figures. Interesting signs of the industrial times in Canada are given by the strong steady increases again this year in the numbers taking up studies in petroleum engineering and engineering physics.

A total of 2130 young engineers are expected to complete their courses and enter the profession in the spring of 1958. This will be a increase of almost seventeen per cent over the previous figure.

Carnegie Tech Increases 1958 Faculty Salaries

Carnegie Institute of Technology has announced faculty and administrative salary increases amounting to a quarter of a million dollars a year.

Effective with the fall semester of 1958, professors and associate professors will receive an increase of $1,000 for the year while assistant professors, instructors, and other personnel will receive increases on an individual basis.

In commenting on the salary increases, Carnegie's President J. C. Warner said, "We are making every possible effort to bring our salaries to a level that will attract and keep teachers of the highest quality. Salaries at most educational institutions, including Carnegie Tech, have lagged behind the rapid increase in the cost of living.

"As a result, many dedicated teachers and other university workers, as well as numerous young people considering academic careers, are being attracted to more lucrative occupations."

He warned that the Nation's schools must not allow these people to be lost at a time when our national educational system should be at its greatest strength.

Dr. Steinman Selected To Design Giant Bridge

Dr. David B. Steinman, New York consulting engineer, has been selected by the government of Turkey as the engineer to design and supervise the construction of a fifty million dollar suspension bridge across the Bosporus at Istanbul. This will be one of the world's largest bridges, and will join Europe and Asia.

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George Tuve to Receive Highest ASHAE Award

George Lewis Tuve, professor of mechanical engineering and director of Bingham Laboratories, Case Institute of Technology, Cleveland, Ohio, has been named to receive the sixteenth award of the F. Paul Anderson Medal from the American Society of Heating and Air-Conditioning Engineers it has been announced by Society President P. B. Gordon, New York, N. Y.

Presentation of the medal is to take place during the annual banquet, January 29, which concludes the sixty-fourth annual meeting of the Society at Pittsburgh, Pa., in the Penn-Sheraton Hotel, January 27-29.

Because Professor Tuve, a NSPE member, has distinguished himself in the teaching profession and as a consulting engineer, he has been selected to receive this highest award of the Society in recognition of outstanding work in heating, ventilating, cooling and air-conditioning.

Atoms and Education to Highlight ASCE Meeting

Papers related to nuclear structures and materials, and problems on engineering education will be presented as some of the highlights of the Chicago convention of the American Society of Civil Engineers at the Hotel Sherman, February 24-28.

A well-rounded program has been developed for the meeting, at which considerable attention will be devoted to hearing about, and seeing, the many large scale construction projects completed or underway in the Chicago region. Several field trips are planned for the inspection of some of these projects.

Also coming under close study at the meeting will be electronic computer equipment as a new arm for the engineer. Five firms supplying such equipment suitable for use in various fields of civil engineering will participate in an ASCE computer show for the first time.

Preserve Inquiring Mind College President Urges

The role of private colleges and universities in reversing our first technological defeat by Russia is the subject treated by President G. Brooks Earnest in *The Spokesman*, a bimonthly publication of Fenn College.

In the November issue, Dr. Earnest advances the idea that private institutions must preserve "the freedom necessary to the inquiring mind" if the U. S. is to win the race for hurling satellites into space.

The Fenn President charges that U. S. restrictive security measures have contributed to Russia's supremacy in earth satellite research, but he believes this supremacy is vulnerable.

"Despite temporary setbacks," he writes, "the U. S. will maintain scientific and technological supremacy. This supremacy, I assert, will depend upon work done in an atmosphere of freedom at private institutions of higher learning."

Dr. Earnest puts the burden of blame for our temporary loss of leadership in earth satellite research on "the long and continuing harassment of our scientists," which has deprived us of the services of certain scientists on any basis, public or private.

Thomas H. Allen Receives 1957 Engineering Award

Thomas H. Allen, of Memphis, Tenn., was the recent recipient of the Nathan W. Dougherty Award for Distinguished Service in the Engineering Profession for 1957.

An Award Dinner was held at The University Center, University of Tennessee, with A. T. Granger, dean of engineering, serving as toastmaster. Speaking on the program was Mr. Dougherty, dean emeritus of engineering, in whose honor the award was presented.

An active alumnus of the University of Tennessee, Mr. Allen formed an association in 1934 with the Memphis Light, Gas and Water Division which has continued to the present time. He has served as vice president and chief engineer, chairman of the board, and president. When the gas and electrical distribution systems were purchased by the City of Memphis, he was appointed president of the Division combining the three utilities.

Messrs. Allen, Dougherty, and Granger are all members of the National Society.

National Strategy Aims To Be Explored in Feb.

The role of commerce and industry in America's national strategy will be thoroughly explored during the three days of the Fourth National Military-Industrial Conference in Chicago, February 17-19.

Many among the country's foremost "thought leaders" and contributors to national policy decisions will be in the group of approximately 1,200 spokesmen for commerce, industry, government, scientific and professional fields, higher education, and the armed services assembled at the Conrad Hilton Hotel for what promises to be a meeting of national importance.

Westinghouse Engineer Awarded Edison Medal

John K. Hodnette, of Pittsburgh, Pa., vice president and general manager and a member of the board of directors, Westinghouse Electric Corp., has been awarded the 1957 Edison Medal by the American Institue of Electrical Engineers, it has been announced.

Established in 1904 by friends of Thomas A. Edison to "serve as an honorable incentive to scientists, engineers and artisans to maintain by their works the high standards of accomplishment" set by Edison, the Medal was first awarded in 1909 to Elihu Thomson, one of the founders of the General Electric Company, and has since been awarded annually to outstanding engineers and scientists, including Nikola Tesla, Alexander Graham Bell, and George Westinghouse.

The Medal will be presented to Mr. Hodnette at the opening general session, Monday, February 3, of the five-day general meeting of AIEE at the Hotel Statler in New York City.

Krakauer Elected to Beta Of Phi Beta Kappa in N. Y.

NSPE member Jay F. Krakauer, who is with the firm of Parsons, Brinckerhoff & Macdonald, New York City, has been elected to the Beta of the New York Chapter of Phi Beta Kappa. Honorary and alumni memberships are based on distinction in letters, science or education. He is a member of the Kings County Chapter of the NYSSPE.

NSF Teacher-Training Programs Scheduled

Approximately 5,000 high school and 250 college teachers of science and mathematics will benefit during the summer of 1958 from teacher-training programs sponsored by the National Science Foundation at 108 summer institutes in 104 educational institutions.

Awards of the grants totaling $5,340,000 for the support of the summer institutes were announced recently by Alan T. Waterman, director of the Foundation. Ninety-nine of the institutes will be open only to high school teachers of science or mathematics. Four will be open to both high school and college teachers and five to college teachers only. Roughly 5,000 high school teachers and 250 college teachers will be enabled to participate through stipends and tuition provided by the National Science Foundation. Twelve institutes offering courses in radiation biology for high school teachers are being jointly sponsored by the Foundation and the Atomic Energy Commission.

"The summer institutes program of the Foundation is in step with current plans for strengthening the training of scientists in the United States," said Dr. Waterman, in announcing the awards.

MSU Plans Programs In Science Education

Michigan State University's Science and Mathematics Teaching Center, organized in the pre-Sputnik days of April 1957, is planning a series of programs aimed at helping to close the gap in science education in Michigan.

For the first time a two-week conference for selected high school sophomores and juniors, which will permit them to observe scientists and mathematicians at work, is being planned for next summer.

A summer institute for community-junior college science and mathematics teachers is scheduled for the summer months.

A series of school-and-industry science fairs is being planned in several Michigan counties.

These events, together with the continued backing and promotion of the Junior Engineering Technical Society (JETS), organized at MSU in 1950, represent a concentrated effort to stimulate interest and participation in science scholarship throughout Michigan schools.

New Research Program Established at NYU

A research program to investigate the patterns of creativity in the sciences has been established by New York University's Division of General Education. Directed by Adjunct Professor Myron A. Coler, it will be concerned with the recognition and encouragement of scientific talent.

According to Dean Paul A. McGhee of the Division of General Education, the new Creative Science Program is "dedicated to the belief that our creative talent is the single most valuable resource of our country and that its adequate conservation and cultivation is one of our most important educational needs and responsibilities."

South Dakota Solves Personnel Problems

The South Dakota Department of Highways in Pierre has solved its engineering personnel problems in an unusual manner. A shortage of qualified engineers forced the department to go far afield to obtain engineering personnel which it needed. The result was eight employees from six foreign countries including two Filipinos, two Hungarians, a German, an Iranian, a Lithuanian, and a Chinaman.

The influx of personnel from foreign countries began in 1950 when the bridge division employed a Lithuanian and a Hungarian. Both of these persons are now citizens. The other six were all hired in 1956 and 1957 and several of them are now in the process of becoming American citizens.

C. J. Dalthorp, director of highways, said that the employment of personnel from foreign countries has helped to offset the manpower situation.

Cinn. Engineering Center Works With HS Teachers

The Public Health Service recently announced that a group of high school science administrators and teachers is working with the staff of the Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio, with a view to adapting some of the research practices there to laboratory exercises in the classroom.

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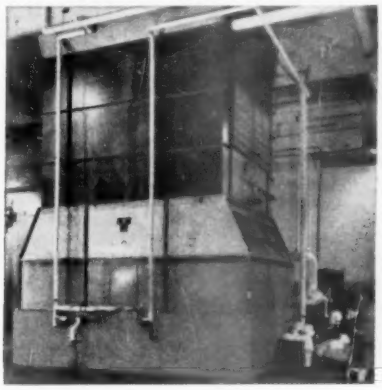

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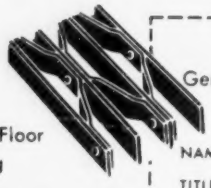

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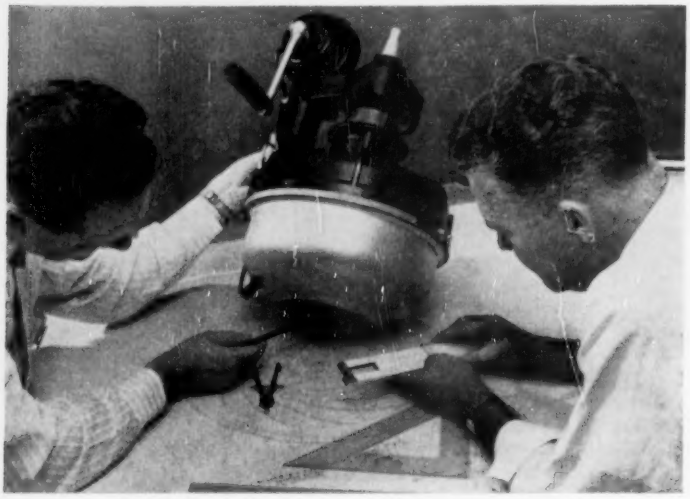
The Magazine of the Registered Professional Engineer

VOLUME TWENTY-EIGHT NUMBER 1



Engineers at Solar Aircraft Company, San Diego, Calif., study a mock-up of the company's newest small gas turbine engine. It is being designed and produced by Solar under a joint Navy Bureau of Aeronautics and U. S. Army contract and will be used to power a one-man helicopter. The engine, known as the Solar Mercury with a military designation of YT-62, is the smallest gas turbine aircraft engine ever built.

Needed: Faith in Our Technical Talent

By

S. B. SPANGLER

Rear Admiral, United States Navy

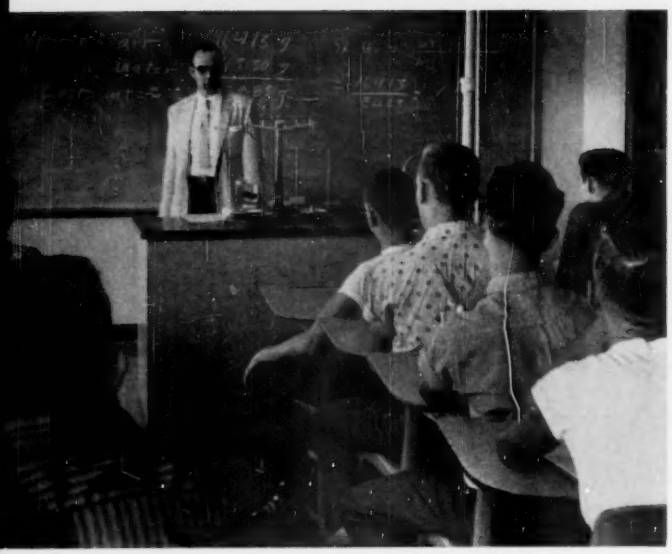
Editor's Note: ***Although the following article by Admiral Spangler was written before Sputniks I and II and their resultant repercussions, this magazine feels most strongly that what it says needs to be presented now more than ever before. The Board of Directors of the National Society of Professional Engineers has already warned against hastily improvised actions having to do with our technology that would only serve to aggravate a complicated and difficult condition that cannot be solved by spur-of-the-moment solutions.***

In these days when it appears to be fashionable to accuse our schools of producing journeymen engineers and poor scientists and of imputing to our world rivals the ability to turn out greater numbers of people of both classes, I should like to raise one small voice in protest. It is most certainly true that in analogy to Lanchesters's game theory which says, in effect, that the effectiveness of an operation is directly proportional to the effectivity of each unit and the square of the number of units, a greater number of less effective technical personnel could be said to produce more results than a lesser number of more competent people.

When speaking of routine development, and by routine I mean such things as statistical search and development of new equipment using reasonably well established principles, such an analogy appears perfectly valid and undoubtedly does produce results sooner. Similarly, within reasonable limits, the more design engineers assigned to a major design project, such as an airplane system, the sooner can metal be cut.

However, one frequently finds that the research problem or the airplane system requires real ingenuity to obtain the best solution or even, in many cases, a proper and usable one. It then becomes necessary to re-examine our simple analogy to assure ourselves that we are not comparing two groups, the effectivity of one of which approaches zero so that, despite its superior numbers, its over-all effectiveness is still inferior.

I believe it to be most certainly true that the average American is not surpassed by anyone in his ability to find ingenious solutions to his problems. Inventiveness, despite Soviet claims to have invented everything, is also a strong characteristic of the American. The very way of life of the average American boy strongly encourages those vital traits of curiosity and contrivance so essential to the top-notch engineer.



The author laments the fact that we no longer seem to impress upon our children that scientific careers bring "respect and admiration."

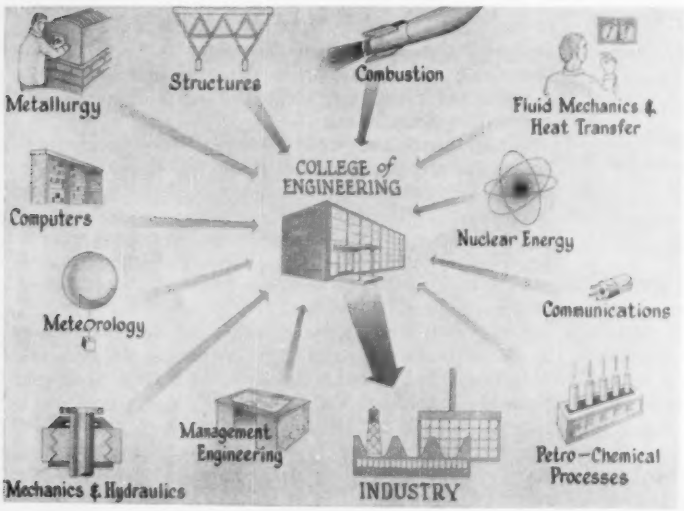
When considering the research scientist, the applicability of our Lanchester analogy is not at all clear. It is most certainly true again that in some kinds of theoretical and applied research the numbers of scientists involved can be a critical factor. However, it is also true that the quality of both pure and applied research is a direct function of the interest and ability of the directing scientist. I do not believe that any nation has brain-power surpassing our own either in quality or quantity. If one analyzes the historical position of this relatively young nation in science it is most certainly not evident that we have contributed less than our proportionate share of scientific achievements.

Possibly one could find some fault with our educational methods, which, being aimed at educating the masses, achieves exactly that. Even the best of our engineering schools appear in their undergraduate curricula to stress engineering by rote rather than by flash of inspiration. That this kind of education is not successful, however, is very much open to question. It certainly appears to achieve for the average or less than average student the makings of a satisfactory journeyman engineer.

THE brilliant student, on the other hand, appears to receive what is required to prepare him for either a top engineering or a scientific career in the post graduate schools. It is here, perhaps, that the deficiency exists, if there is a deficiency, since not all students can afford further study. It is entirely possible that if some of the money devoted to preparing students for a career as professional football or basketball players were to be diverted to the further education of worthy candidates for a career in scientific pursuits, the Nation would be better off.

This latter brings up another point which might be worth considering here and that is just what the position of the scientist and engineer might be in our modern world. In Russia his position is quite clear. Provided he accepts the conditions as they are in the field of science, and even the very position in that field that he is directed by the government to develop an interest in, his future is secure. His education is fully financed by the government, he is well paid by Russian standards, and he enjoys all the privileges and prerogatives of a member of the ruling class. He is praised and honored and permitted a certain degree of freedom of action and expression. However, his position has certain of the aspects of any kept performing animal in that his field of effort is pretty well outlined for him and a definite daily quota of tricks is demanded of him. It is said that many animals develop an affinity for this type of life and grow to prefer it to the insecurity of foraging for themselves in the jungle. Intellectual freedom has little meaning to those whose concept of the ideal life is a full stomach. While freedom of thought is often stated by the communists to be a cornerstone of their religion, the actualities are almost the direct opposite.

In our country, on the other hand, the life of the scientist or the engineer is full of curious anomalies. We can all well remember when, a few years ago, the official position of at least certain sections of our government was that there were already too many engineers, and boys were advised to select some other more promising career. Even today, while certain parts of our government deplore



The importance of continuing research must be imbued at the college level. Here is a typical College of Engineering research program working in cooperation with industry.

An intricate part of a steam turbine generator, the result of the mental processes of many engineers, is installed at a General Electric plant. If the engineer continues to approach his profession as an exciting adventure, America need not fear for the future.

the dearth of scientific talent and compare our position unfavorably with that of other nations, an airplane manufacturer is criticized, at least by inference, by another section of our government for contributing to the education of worthy students.

The scientist has freedom of selection of career and of position, and no attempt is made to control his thoughts. However, if he strays from his scientific field to comment on government policies or world conditions, he is promptly told to return to his laboratory and leave such things to those who are better informed and more learned in such things. His ability to direct major programs in his field is usually recognized but he is seldom selected for a major administrative position on the grounds that his outlook is too narrow. He is accustomed to being told that his services are invaluable to his organization and his country, yet the largest salaries go to the lawyers, the salesmen, and the accountants.

Perhaps the greatest threat to his position, however, arises from those who appear to desire to reduce the intellectual achievement of the individual to the mediocrity of the average.

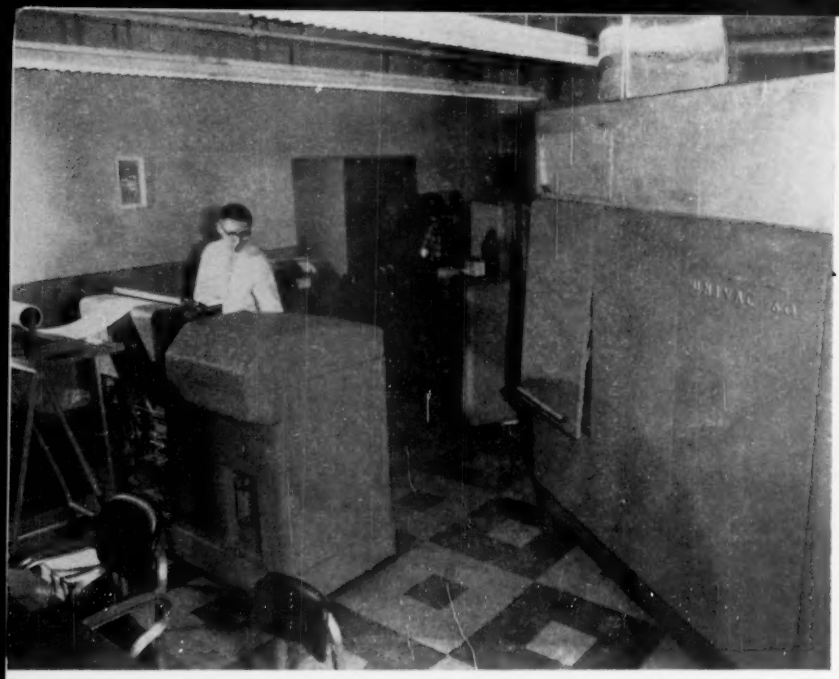
But security can only be achieved as an individual or as a nation by being the very best there is insofar as you are able. Being like all the rest provides a certain degree of protective coloration but it does not provide true security. If the scientist and the engineer continue to approach their professions as exciting adventures rather than a means of earning bread, we, as a nation, need not fear for our future. The nurturing of this attitude may well be the deciding factor in our race for technological superiority.

While I feel most strongly that we are not behind anyone in scientific achievement there are things we can and must do if we are to remain in that position. When I was young, a teenager was encouraged to enter the scientific professions, if he was capable, by being told he could thereby achieve a position of respect and admiration, and could experience the intense self-satisfaction of having the opportunity to serve his community and the nation. The child of above average intelligence and scientific inclination was given special courses and extra attention to assure his success in his future efforts. We no longer seem to do that, the stated reason being that our schools are overcrowded and our teachers overworked.

AFTER the student has demonstrated his abilities in his chosen field and his interest in going on beyond undergraduate work it is apparently not too difficult to get some assistance in his graduate studies. However, post-graduate students are sometimes severely handicapped through having insufficient access to their mentoring professors, both by reason of too few instructors and of the habit of permitting professional outside consulting work to a degree inconsistent with teaching duties. Possibly a raise in the pay scale of college professors to an appropriate level might help this latter situation.

Following his graduation, the embryo scientist or engineer faces a real problem. He is promised everything by everyone because of the shortage of people in most all the scientific fields, and he really does not yet know exactly what he wants to do. Frequently he shifts jobs two or three times in the first three years before finally settling down, perhaps a most desirable thing for him but a wasted period for the country insofar as advancement of scientific knowledge is concerned. If there were a way for him to contribute during the period in which he is making up his mind everyone might be better off.

Contrary to popular opinion, the government laboratory normally offers far greater possibility of freedom of thought and choice of work than do any but a few of the commercial laboratories or engineering groups. In my laboratories a young graduate is seldom considered as knowing just what work he wants to do, and should be doing, for at least the first year, after which he can be assigned to almost any field he promises to be effective in. It might be thought that the government laboratories would oppose such a trial period knowing that they gain the graduates' services for a relatively short period and that period not, perhaps, at maximum effectiveness. In general, however, that is not true and most laboratory



Univac, one of the greatest and most needed accomplishments in recent years, came into being only after long periods of research and development. In the defense field, we are at the point where we must critically assess each project having in mind its eventual application and its effect upon the nation's resources.

directors welcome this procedure since they feel they gain two major advantages from it. First, they can anticipate retaining a certain number of the engineers or scientists, and second, the building up in industry or in scientific laboratories of a group of people familiar with the government research and development organizations' objectives and problems, and with a certain loyalty to them, can only help the government in its dealings with industry.

In considering the over-all position of this country in research and development I have so far tried to suggest what might be done about the springs which furnish our flow of scientific talent.

This nation has always boasted of its ability to do anything and everything, and one of its greatest strengths is that it frequently demonstrates that it can do exactly that. The average American feels that he can do most anything he makes up his mind to try. Fortunately for him, perhaps, he does not usually make up his mind to attempt everything.

In considering our shortage of scientists and engineers perhaps the time has come to determine whether or not we might not reassess our research and development programs in the light of available manpower. We may find it necessary to defer some of our more ambitious projects or to work at them on an extended time scale. It is thoroughly possible that such an examination might turn up a few anachronistic items as well as undertakings which are somewhat further away both in concept and value than our most optimistic advisers would have us believe. All too often, it seems to me, we get carried away by the fact that there is a problem and that the problem can be solved by dint of extravagantly intensive use of scientific brainpower without first having decided whether the problem actually needs solving or not, or whether the solution, if achieved, has any earthly use or offers us anything substantially better than our current way of doing the required task.

We seem to have adopted the theory that there is an unlimited supply of everything including scientific talent and that, therefore, there is no need to critically assess each project having in mind its eventual application and its effect on the nation's resources.

WE badly need the zeal, enthusiasm, and ingenuity of youth and its supreme confidence that the walls are scalable, but we also need the broad rear of experience to provide a moderate amount of mass control of blue sky projects. If I may be permitted an engineering analogy, the momentum formula includes both mass and velocity, and the featherweight idea even if travelling at high velocity can more easily be diverted or stopped than one which has the mass of knowledge, experience, and prestige behind it. If this simile is apt it should teach us that the complete abandonment of an old and tried device is seldom logical or successful, at least until such time as its replacement has accumulated enough experience to have acquired a mass of its own.

Perhaps there are no simple one sentence answers to the problem of how to determine those developments in which we should concentrate our maximum efforts and to which we should devote our available scientific talent. In the non-military world the solutions are far simpler than they are for us in the military. A university can afford almost any kind of basic research which promises to con-

(*Continued on page 43*)

About the Author . . .

Admiral Spangler

Rear Admiral Selden B. Spangler, USN, was born in Chicago, Ill., and received his primary education in Richmond, Va. He was graduated from the Naval Academy in 1923, and after two years on destroyers in the Atlantic Fleet, reported to Pensacola for flight training. He received his wings early in 1926. In 1930, he took his first postgraduate course at MIT, receiving the degree of Master of Science. He took his second postgraduate course at MIT in 1938. Taking over as director of the Power Plant Design Division of the Bureau of Aeronautics in 1941, he held that position for the next five years covering the period of World War II. Admiral Spangler later became director of the Maintenance Division of the Bureau.

He became Commander of the Naval Air Development Center, Johnsville, Pa., in 1950 and following his promotion to Rear Admiral in June, 1951, was assigned as force maintenance and material officer of the Air Force, Atlantic Fleet. On June 28, 1954, he assumed his present position in command of the Naval Air Development and Material Center with headquarters at Johnsville. In his over thirty years in naval aviation, Admiral Spangler, who is well-known both as an engineer as well as a pilot, has accumulated over 5,000 pilot hours.

Engineering Employment Practices Digest

A short digest of a monthly bulletin published by the National Society of Professional Engineers in the interest of advancing cooperative relations between professional engineers and their employers. To regularly receive the complete publication which is distributed widely to industrial, commercial and educational organizations, write the NSPE, 2029 K St., N.W., Washington 6, D. C.

✓ **Engineers at the Electronics Division of Westinghouse, near Baltimore, have voted 171 to 115 against union representation by the Salaried Employees Association, affiliated with the Federation of Westinghouse Independent Salaried Unions. Following the first election in November, which did not produce a majority for the salaried employees union, an ESA union, or "no union," the company stepped up its direct contacts with the engineers, providing information to challenge union claims and sponsorship of an invitational dinner for the engineers. A company official told the engineers that the future of the Division was dependent on technical competence and superiority of work, and the type of people who could provide these qualities were not the type to be found seeking the protection of a union.**

* * * * *

✓ *Commenting on the outcome of the run-off election, NSPE President Garvin H. Dyer said "the recent election result is further confirmation and support of our view that unions are not an acceptable mechanism to deal with the problems and aspirations of professional engineers." He warned against complacency, however, and said "we must recognize and treat the source of dissatisfaction which leads too many engineers, even though a minority, to look toward unionism for the solution of their professional problems." President Dyer urged management to adopt a strong position when faced by union bids, and to continually analyze its policies and personnel procedures to meet the reasonable expectations of professional employees for professional recognition and status. NSPE will continue to offer its full cooperation to professional engineers and their employers, he added, so both may work together in a cooperative spirit of teamwork.*

* * * * *

✓ Recent Civil Service Commission action boosted the salaries of Federally-employed engineers and scientists to the highest step of their grades. The maximum increase is $1,080 and the lowest, $135. The new rates range from $4,480 for GS-5 to $14,835 for GS-17. GS-18 at $16,000 was not affected as that amount is fixed by law.

* * * * *

✓ The NLRB has asked the Supreme Court to review the Court of Appeals decision holding the Board's action illegal in placing nine nonprofessional employees in a voting unit with professional employees, without the consent of the latter. The Board contends the courts do not have jurisdiction to enjoin its decisions in representation cases. NSPE participated as a "friend of the court" in earlier proceedings in support of an injunction against the Board and will file a similar brief in the Supreme Court if review is granted.

* * * * *

✓ **The National Association of Manufacturers has formed a committee to promote improved utilization of engineers and scientists. The President's Committee on Scientists and Engineers has scheduled a further series of utilization conferences, most of which will be sponsored by the NSPE-affiliated state society and the state university. A list of the dates and locations is available upon request.**

* * * * *

✓ *The AFL-CIO recently deferred action on a resolution calling for an independent professional research study to pave the way for organization of white collar and professional employees.*

* * * * *

✓ Requests for engineers filed with public employment offices dropped to 2,888 in October, 1957, compared to 6,491 for the same month a year ago. Calls for draftsmen were down seventy-two per cent for the same periods. By branch, highest calls for electrical engineers, followed by mechanical engineers.

* * * * *

✓ **The Conference of Municipal Public Health Engineers reports that of 157 engineering positions recently surveyed, half require professional registration or eligibility for registration. Positions having the requirement pay a median maximum salary of $8,160, compared with $6,570 for those not having the requirement.**

* * * * *

✓ *A survey by Power Industry shows that only 8.8 per cent of engineers think they are compensated in the same proportion as the professions of medicine and law. But 78.4 per cent of the same group would select engineering as their career again. More than eighty-one per cent felt that engineering unions did not benefit engineers.*

Public Relations and the Engineer

By

ASHER B. ETKES

Asher B. Etkes Associates, Inc.

Times Have Changed . . .

When the early Otis elevator shown below was designed by engineers probably few knew of the feat. Today, however, modern accomplishments are given dignified publicity with engineers sharing in the credit. The above story was covered in the press back in 1951 when the first aluminum panel and column cover was installed on the Alcoa Building.

In today's era of sharp competition and blatant commercialism, the engineer, by tradition and professional ethics, is limited in telling of his own capabilities and accomplishments.

He finds he can do no more than whisper of his specialized services. The most any engineers do to bring their work to the attention of the public and potential clients is to place professional cards (giving no more than the name, specialization and address of the practitioner) in trade publications and business newspapers. Most engineers do not even resort to this modest form of professional promotion.

Yet, with today's modern concepts of marketing and merchandising there are "sales" techniques available to the engineer by which he can tell the story of his services and organization. These concepts and techniques, known as public relations and publicity, have been sadly neglected by the professional engineer, since he generally thinks of them in terms of press agentry. In truth, publicity is the strongest means available to the professional engineer to tell his story. This statement applies, however, only when the technique of publicity are coordinated in the over-all concept of a well-planned, well-executed, long-range public relations program.

What then is public relations? What is publicity? What is advertising? And what is sales promotion?

Basically, they are all part of the successful marketing techniques of American industry. Marketing deals with the sale of products *and services*. Products and services, because of their different natures, have to be "marketed" in a different way. It is obvious that a professional service cannot be sold as a breakfast food or lipstick would be sold. This is where the concept of public relations and, of course, the techniques of publicity come into play.

Public relations is basically getting more people to know more about you and your work and getting them to think kindly about it. It is a means and method of developing the public's attitude toward you, your work and profession. The repeated appearance of an engineer's name in national publications in connection with meritorious proj-

Here are some of the panel members who recently probed such issues as, "Why does the engineer often work in anonymity although the press and public show a desire to know about his work?" The program was given by the Brooklyn Engineers' Club in New York. Shown, from l. to r., are: Robert F. Kane, F. H. McGraw & Co.; NSPE member Raymond Mirrer, moderator; Edward Brause, Merritt-Chapman & Scott; and John Rehfield, editor of *Construction Equipment* magazine.

ects obviously will enhance his reputation and eventually may lead to his being recognized as an authority in his field.

As stated before, public relations is a concept. You have to carefully evaluate your objectives. What is it you want to achieve? In what field do you wish to specialize? What is it you want to do in your professional career?

Once having decided on your objectives, you must next determine what specific groups of people you will have to persuade if you are to achieve these objectives. For example, if you want to specialize in bridge engineering, most of your dealings, naturally, would be with governmental or municipal groups. Once having decided your objectives and the people you have to deal with, you then bring into play the "strong arm" of public relations, technically known as publicity.

Publicity, basically, is the reporting of newsworthy events. It is anything that is new to people. News may be defined as anything that excites, astounds, amuses or informs the reader. Publicity generally has to be newsworthy before an editor of any media would be interested in relaying it on to his readers, your potential clients.

ADVERTISING, on the other hand, is paid space and as such, anything within the limits of good taste and legal restrictions may be stated in that space, whether news or not. Publicity definitely has to be the reporting of something new and worthy.

Sales promotion is the blanket that covers all efforts to increase business—advertising, marketing, publicity, direct mail, personal solicitation. It is dedicated to improving sales and business. It can be applied, in some of its forms, to either a product, such as an automobile, or a professional service, such as engineering. Its strength depends upon the vigor of its components.

Every man that earns a living through his own efforts, whether he be doctor, lawyer or engineer or butcher, baker, candlestick maker, practices sales promotion in some form. How well he practices it, within the limits of his own professional or business ethics, determines his financial success to a great measure.

Since the engineer is restricted by ethics and tradition from making effective use of advertising, marketing and direct mail, and even to some extent personal solicitation, if he wishes to advance himself and his profession, he can turn to public relations and publicity.

There are three ways an engineer can get good publicity. He can publicize his projects; he can publicize his organization; or he can publicize the personnel comprising his organization, as well as the principals. Each of these three categories has many possibilities for news. It is the job of the professional public relations man to recognize the news, see it from the editor's and reader's points of view and write it so as to achieve the objectives of the engineering organization.

A public relations program should be adapted to your own needs and objectives, whether they be added prestige, more clients, or both. The engineer specializing in one field will have to have his program tailored somewhat differently than one in another field. If you work on projects throughout the country, you will need a national campaign, but if your work is mainly local, your campaign would be limited.

Before seeking to publicize any project, a bridge, building, air base or sewage system, be sure it has merit. It should have at least one outstanding feature that makes it different from other projects of the same type. If the project does not meet this qualification, it should be rejected, as no publicity is better than weak publicity.

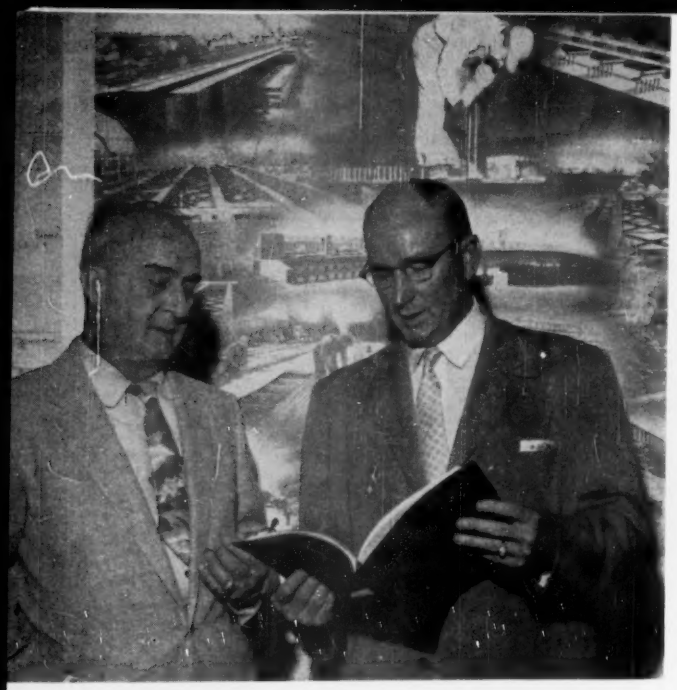
There are several questions you and your public relations counselor can ask yourself about the project. Is it newsworthy, satisfying the definition given above? Can the individualistic features of the project help solve problems for other engineers or builders? Has the use of some new material or construction method provided a good test of its value? Were some striking new economies effected in the construction? Is the project one in which there is a great deal of public interest?

THE major source of publicity is appearance in publications. The publication field is tremendous. In addition to many thousands of daily and weekly newspapers and hundreds of consumer magazines, there are more than 2,000 major trade publications and thousands of smaller ones, covering every subject from art to zoology.

Magazines other than the engineering and architectural books are interested in news of the building and construction fields. There are periodicals covering all sorts of specialties in the fields—roofing, plastering, illumination, glass, etc.—in addition to interest in certain types of engineering projects in the general or consumer magazines. Your public relations advisor will know how to take advantage of this interest.

Take a theoretical project, a modern industrial plant that will produce plastics. Let us imagine that this job is unique in design, offers new ideas in the use of materials and employs money-saving engineering. In addition to the engineering and architectural magazines, the plastic magazines are an obvious market for a story and photographs.

But your public relations counselors could also probably "sell" the story to a variety of other trade publica-



Dignified and informative publicity at work. Kenneth R. Scurr, state bridge engineer in the South Dakota Department of Highways, who designed a new type bridge at Fort Pierre, is shown (left) reviewing technical articles on the bridge with Albert E. Egger of Egger Steel Company, Sioux Falls, which fabricated steel for the bridge.

tions, depending upon the project's features. Is there something unusual about the roofing, fenestration, floor arrangement, lighting, air conditioning, or traffic, equipment and maintenance provisions? Has the basic construction been done economically, overcome site difficulties or provided speedy construction? If so, your public relations counselor may be able to place the story with a half a dozen or more additional publications. It is his job to take full advantage of the possibilities inherent in every one of your projects.

It is sometimes possible to team up advertising and publicity successfully. For example, a school building is newsworthy and the part the engineer plays in its design and construction is part of that news. Many of the building supply manufacturers that furnish material for the school advertise their products. Your public relations counselor may properly call the manufacturer's attention to the use of his products in the school and help the manufacturer develop an advertisement in which the products are shown in use and your name as engineer is mentioned.

It is your responsibility when working with your public relations representative to be prepared to cooperate fully and supply him with the necessary data and materials, extra blueprints and drawings and photographs, if available. Normally, your public relations counselor will make arrangements for a competent photographer to take pictures.

There is no substitute for a good photograph. Top engineering pictures require a lensman with experience in that type of work. The man that can take good candids, news shots or portraits is not necessarily the photographer that can do the best job with a picture of a bridge, for example.

A public relations office normally has contacts with a number of photographers specializing in various types of work. The photographer's rates may seem high, but if his work is good the cost is warranted.

A PUBLIC relations counselor knows that a good publicity story doesn't necessarily have to die when a magazine or a newspaper becomes outdated. It can be kept alive by various means of merchandising, depending on your personal taste and the traditions of your office. In reprint form the story can be used as a mailing piece to your former, present and prospective clients. Your public relations organization can obtain these reprints fairly economically from the publications in which they appear, if the order is placed in advance or immediately after the story is printed. The value of the reprint in your newsletter or brochure is many fold, since it is something reported by an impersonal authority. It is not self-praise, for someone else is making the laudatory statements.

This type of material can also be of value at local or even national conventions when you are presented with an opportunity to exhibit your work. Blow ups of magazine articles and news stories will catch people's eyes and be remembered. The reprints may also be modestly framed and displayed in your office or sent to civic leaders of your community. The more important the publication, the more prestige you will garner.

To assure success, a publicity program must be a continuing effort. You will need a public relations representative, and you should select him with care.

A public relations organization for an engineer must be one with dignity and special knowledge. A good firm handling industrial accounts that frequently involves construction news is a likely prospect. Editors may be willing to make recommendations to you, as may the public relations departments of building supply manufacturers. Examine the presentations of several firms before you make your decision. Any good firm will prepare an outline of a proposed publicity program for you and can show you sample results of the work they are doing for their present clients. Make your decision on the basis of this program and the samples shown you. Is this the type of work and placement you would like for your own publicity?

A public relations firm can provide two types of services for you. If your projects flow along continuously and you can supply the firm with newsworthy material throughout the year, it is best to contract for the firm's services on an annual basis with a fee paid each month. However, if you

(*Continued on page 47*)

About the Author . . .

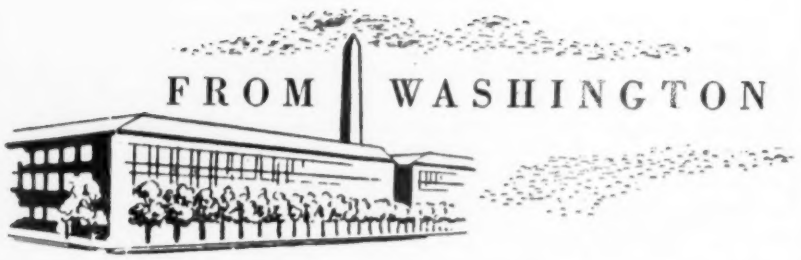
Mr. Etkes

Asher B. Etkes studied engineering and has a B.A. in architecture from the Carnegie Institute of Technology, Pittsburgh, Pa. He took graduate work in public relations at Columbia University, New York City.

Mr. Etkes has been in contact with the building industry throughout his professional career, having worked in all phases of design, promotion and construction with architects, engineers, contractors, builders and manufacturers.

The Etkes public relations firm, located in New York City, is primarily devoted to public relations and publicity for the building industry. Clients of the firm include many leading building products manufacturers.

Mr. Etkes is a member of the Public Relations Society of America.



By
Milton F. Lunch,
N.S.P.E.'s Legislative Counsel

THE PRICE OF EQUALITY

WHEN the Founding Fathers proclaimed in the Declaration of Independence ". . . that all men are created equal . . ." they struck a note of high principle which has remained as one of the true fundamentals of the American system. Few, if any, would challenge the virtue and soundness of the principle, but it is something else as to just what it means in practical application.

This question is raised because it lies at the bottom of recent developments which may lead to a revamping or abolition of a military service program originally established to better utilize the training and ability of certain engineers and scientists during their military service. Shortly after the start of the Korean War the Army organized its Scientific and Professional Personnel (SPP) program to achieve maximum utilization of draftees with professional training in engineering and science. Those selected, under high professional standards of education and experience, are assigned to military installations engaged in engineering and scientific work, such as the Army Chemical Center, Aberdeen Proving Grounds, and the Corps of Engineers' Research and Development Laboratory. During their period of service the engineers and scientists stay in their enlisted rank, and while they are eligible for promotion relatively few reach the rank of corporal or higher during the two year draft term.

Throughout this program the SPP's resented the fact that in addition to performing their professional duties they had to "pull" the menial military duties of K.P., guard, drill, etc. Fairly typical of this viewpoint are the following extracts from a published letter in an engineering journal:

> "Ironically enough, it's the military that most strongly denies professional status for scientists and places its drafted scientists into positions where they can be only marginally productive. An assumption of the Army's SPP program is that a technically competent person can work with reasonable efficiency on a technical project for a certain portion of his time regardless of his status and general treatment the rest of his time. Since technical work is mostly mental, this isn't true; being given the status of a menial and treatment suitable for juvenile delinquents mostly destroys his effectiveness in his work."

Relatively little publicity has been given to this fairly common type of complaint, probably because the professional societies did not want to jeopardize a plan which tried, and to a large extent succeeded, in raising the utilization level of engineers and scientists considerably above that which existed before SPP was created.

Now the issue is in the open and has been widely publicized, following an exchange of correspondence be-

Rep. Albert W. Cretella
of Connecticut

tween Representative Albert W. Cretella of Connecticut and Major General Herbert M. Jones, the Adjutant General of the Army, whose office administers the SPP program. Rep. Cretella opened the sore point by asking for information on a complaint sent him, to which the Adjutant General replied that "the most effective method is to have all soldiers of a unit perform these duties (K.P. guard, etc.) on a pro-rata basis." General Jones added that rotation of the "unpopular" duties among all enlisted personnel re-

(Please turn the Page)

sults in only minor interference with other duties and "equality of treatment of all soldiers is maintained."

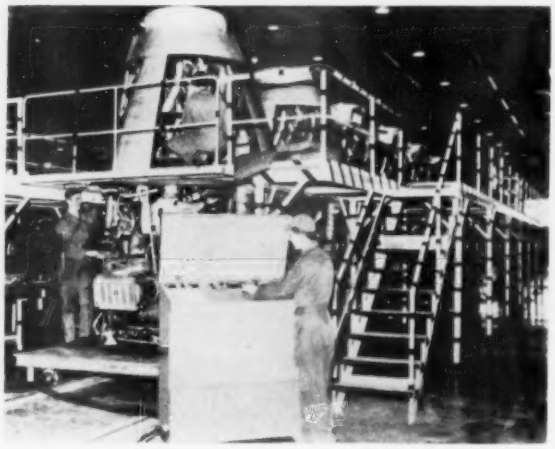
But Rep. Cretella was not satisfied with this answer. He wrote further that since his original inquiry he had received a great many unsolicited letters from enlisted personnel who were or had been in the SPP program which backed up his charges that there has been a loss of scientific manpower in the program. The program should either be re-evaluated or completely scrapped, the Connecticut legislator declared. He said, for instance, that two-thirds of all enlisted personnel at the Aberdeen Proving Grounds are exempt from menial duties, excluding the 130 men in the SPP program who are required to regularly perform K.P., guard, and other housekeeping duties. Rep. Cretella cited the exemption of military police, bandsmen, clerks and firemen and the entire medical detachment. "This is certainly a strange method of establishing equality of treatment for all soldiers," he added. "It is also enlightening to know that in the American armed forces a filing clerk or tuba player is more indispensable to the Army than a mathematician who is doing research on ballistics." Rep. Cretella further commented:

> "I believe the Army has an obligation, especially in view of recent revelations of shortages of scientific talent, to investigate these circumstances thoroughly and without prejudice. If they are found to exist, either a candid redefinition and thorough overhauling of the entire Scientific, and Professional Program is demanded or it should be discarded as an expensive, wasteful and unworkable venture. This is a matter under direct control of the Army. That branch should be able to correct the situation itself rather than be subjected to a full scale Congressional inquiry."

Rep. Cretella said he had documented information that 53 engineers at the Aberdeen Proving Ground were spending an average of 22 per cent of their time at such chores as washing dishes and standing guard. "What is more alarming is that 44 of the 53 engineers stated that their regular military jobs could be ably performed by high school graduates, technicians or clerks. The great majority of these persons were in essential industries before being inducted. If the Army cannot use their talents and experience to the optimum degree, they should be immediately released to fill critical shortages in the civilian scientific forces."

To all of this the Army replied first that regulations required the SPP'ers to perform the same details as other enlisted personnel. Later Army sources said consideration was being given to a change in regulations to free the SPP personnel from routine duties. Also, study is being given to the possibility of releasing those with scarce skills who cannot be utilized fully in Army scientific work. Another by-product of this exchange of correspondence is the possibility that the Army will advise draft boards to pass over more scarce skilled men so they can continue their civilian jobs. Still another result will be a restudy of the positions in the SPP program which might be downgraded so they could be filled by enlisted men without as much professional training.

A significant, but different, point which emerges from this exchange pertains to the term of service. Rep. Cretella said that exceedingly poor publicity was given to the fact that scientists and engineers of draft age could, under the 1955 Reserve Forces Act, fulfill their military obligation by six months of active duty and the remainder in the inactive reserves. Of the 700 SPP enlisted men at the Army Chemical Center, he said, all but sixty have a two year obligation, and these men would have been making a more significant contribution to the national de-



Here are engineers at work in the Armed Forces. Too many, though, it has been contended, are lost to menial duties.

fense if their military obligation was only for six months. He also called attention to a recent Department of Defense directive reducing the time of active duty for those drafted from critical skills from six to three months. The three month training period covers only straight military duties, and Rep. Cretella asked whether this order might not be a prelude to the total and permanent abolition of the SPP program.

If the SPP program is discontinued it will close out an interesting and constructive experiment which had many valuable features, but failed ultimately largely because we could not, or did not, overcome the tradition and doctrine of "equality" for all of the same rank or status, regardless of individual differences in brainpower, training and relative value of contribution.

This same philosophical problem is inherent today for government, industry and other users of engineering and scientific talent as the professionals press for recognition and status.

The AIEE Unity Plan— Editorial Comment

The American Institute of Electrical Engineers through its president, M. S. Coover, propose a plan for allocating and coordinating the activities in which the engineering societies of the United States interest themselves. Dr. Coover's statement was published on page 29 of the July, 1957, AMERICAN ENGINEER with an introduction by Morris D. Hooven, a past president of AIEE. NSPE is giving the plan exhaustive study.

The AIEE plan has brought forth editorial comment by most of the engineering journals and statements by the officers of some of our major engineering societies.

The plan merits the study of all engineers who are interested in the unity of the profession. As its contribution to giving the plan full publicity, the AMERICAN ENGINEER reprints herewith pertinent articles, editorials and letters from members. Others will follow in later issues.

Letters from engineers expressing their views on the AIEE plan will be welcomed and will be printed in the AMERICAN ENGINEER, within the limitations of available space.—THE EDITOR.

Letters to the Editor Of the American Engineer

Dear Editor:

I have noted in the November issue of the AMERICAN ENGINEER that Mr. Neff's Committee on Improved Professional Relations is considering ways for NSPE to expand its membership to include, as well as registered engineers, those qualified members of the profession whose work does not by law require registration.

It is my opinion that NSPE would be committing a serious error if it should include in its membership anyone other than a registered engineer. Rather than to consider ways for NSPE to represent non-registered engineers, I believe that we should be working diligently to make registration a requirement for employment in a truly professional engineering position.

Registration is one of the essential requirements for practice in the legal and medical professions. For NSPE to suggest anything less would be to defeat its purpose for existence. All lawyers and physicians are registered, but this does not mean that all lawyers are members of the Bar Association nor that all physicians are members of the Medical Association.

True, we want to increase the membership in NSPE, but let us not lower the requirements one inch.

ROBERT W. CUNNY, P. E.,
Vicksburg, Miss.

Dear Editor:

. . . The (main) problem is whether we are to continue a low paid over-loaded group, or will we look no further than the Medical Association and the skilled trades to see that fewer members and higher salaries go hand in hand.

When are we going to devote our publications and our legislative programs toward one goal of increasing the educational requirements of the engineer? The sooner we hit 6, 7, and 8 years of educational requirements, the smaller will be the number of engineers and the higher their salaries, and needless to say NSPE will be strong.

To supplement the program mentioned above we need to grow strong in each chapter. This could be accomplished by setting up a building fund in each chapter to provide an engineers' building for each chapter. The money for these buildings could come from the money normally contributed for the dinners before each meeting and by selling shares in the building to members or graduate engineers.

TED GILDER, P. E.,
Elyria, Ohio.

Dear Editor:

I commend the AIEE proposal for expanding Engineering Unity, presented by M. S. Coover in the July issue of AMERICAN ENGINEER. It deserves the serious consideration of each member of NSPE. It will undoubtedly require modifications on specific points, but in principle it is sound.

Unquestionably, there is a strong national emphasis on engineering registration. This will continue to grow, and I predict that within a few years engineering college graduates who do not plan to become registered at their earliest opportunity will be rare indeed. Why not, therefore, write into the by-laws of this proposed over-riding professional and technical society rules allowing present practicing engineers to become members, whether registered or not, but requiring engineering graduates within the past several years, and all future graduates, to become registered in order to join?

This proposal will have a detrimental effect on NSPE's ideals, *but only temporarily*. In return we would gain many excellent engineers in all branches, along, admittedly, with some undesirable ones; we would promote engineering unity to a degree we have not yet dared dream of; and also we would advance the concepts of professional engineering at a more rapid pace than we can ever hope to with our present philosophy. Imagine the greatly increased reader coverage we would immediately acquire for our professional engineering propaganda!

Let us not be so stubborn that we miss a good opportunity to advance our over-all objectives. Let us not worry about a few years in the interim if several decades will again see us with our ranks closed, bolstered not only by a registration requirement for all members; but also by a high membership level. I, too, favor the registration requirement, but not to the extent that I am unwilling to consider a *temporary* relaxing of this rule to promote another of our objectives: Engineering Unity.

I purposely have not tried to define "engineers" as referred to above for this proposed interim period. This would have to be the responsibility of the proper committee. Presumably an engineer who could qualify for a designated grade in the technical engineering society of his chosen field, would be acceptable. NSPE might, then, have an additional grade of member, just as AIEE now has several, with this additional grade being a temporary one. It might be considered as a "grandfather clause" to allow a successful merger. I submit to you members who are sticklers for registration that there are thousands of registered engineers, and highly qualified NSPE members, who are registered through a grandfather clause.

F. B. HEADLEY, P. E.,
Pittsfield, Mass.

Dear Editor:

The engineering profession certainly needs unification. The plan put forth by Mr. M. S. Coover, former president of AIEE, is a step in that direction, but I strongly oppose his provision that the NSPE open its membership to unregistered engineers. Too many engineering organizations have opened their membership to people merely associated with the profession, i.e., tradesmen, etc. I want to express my wholehearted disgust with this sort of practice and would be the last to agree with admitting unregistered engineers to NSPE membership. On the other hand, why not give a little in the interest of unification (the other organizations are going to have to give a little also), and open the NSPE membership to unregistered engineers at somewhat less than members, say associates. The Engineers Club of Hampton Roads, an organization of which I am also a member, practices this sort of thing.

I would, however, go another step and require that each associate meet the requirements of an engineer as adopted during the 1957 NSPE Board action at Bismarck on the use of engineering titles. Let's by all means keep the NSPE as a real engineering organization. However, we need unification so badly that we must consider lowering our standards, in a very limited way, in order to gain our objective.

H. C. WILLIAMS, JR., P.E.,
Portsmouth, Va.

Dear Editor:

The proposal for NSPE to join with EJC is so inane and indecent, that if it comes to pass the members of NSPE will have gotten exactly what they deserve. The

writer's resignation from the Society takes effect the day this unhappy event occurs. For the NSPE to degrade itself in this way, would be an act of suicide. . . .

Some members of the NSPE appear to be ignorant of the *real* intent of the EJC and whom it represents. In 1953 when the writer could not get employment as an engineer with three large companies because of his advanced age—48 years—the EJC was proselytizing in the high schools urging the students to enter engineering, because of an alleged shortage. Obviously the students were smarter than the EJC and the *Captains of Industry*—as well as some self-deluded engineers—for the alleged shortage continues. Indeed, the same three companies who decline to employ superannuated engineers—that is, men over thirty-five—continue their frantic advertisements for engineers today; however, despite explicit written inquiries by the writer, these companies—du Pont, Chemstrand, and Air Products—refuse to disclose their age policy in writing.

Since the puerile and superstitious *Engineers' Creed* was adopted by the Society without a chance for the members to vote on it, I suppose that degradation of the Society will occur similarly.

HENRY ECKHARDT, P.E.,
Fair Oaks, Calif.

Dear Editor:

Dr. Coover's AIEE proposal is a positive and dynamic approach to professional unity. I urge its support.

VERN W. TENNEY, P. E.,
San Mateo, Calif.

Dear Editor:

It is truly heartening to read the various discussions on unity in the October and November issues of AMERICAN ENGINEER.

The AIEE proposal is a surprisingly sound one. Perhaps the remaining functions of the EJC and ECPD could be combined into one organization as suggested in the August issue of *Civil Engineering*. But to put NSPE as an organization under EJC is tantamount to having a hierarchy of organization of organizations. Thus, a conclave of top officers of the separate organizations or representatives could decide what NSPE policies toward social, economic, legislative and professional affairs shall be. Here, the constituent member *does not* have a direct voice in deciding these affairs. This is exactly the reason why EJC, in past attempts, *could not* perform as a unity organization. Then let us not travel down the "time-worn rut" again. I, personally, do not favor such an organization.

Under the AIEE proposal, NSPE has been given a challenge. Will it accept the challenge? Can it accept the challenge? The need to accept the challenge is also obvious from the additional viewpoint of the recent economy measures taken by industry. Some ill feeling has been created and there is a vacuum.

At the present moment, NSPE consists of some 43,000 engineers. It therefore cannot purport to talk for 250,000 engineers. The problems are: (1) Engineers-in-industry thus far fail to see why allegiance should be given to a weak organization and the weak organization appears to be unable to perform until it increases say, three-fold. (2) Engineers-in-industry feel that NSPE and state organizations are predominantly controlled by consulting engineers. This is due to the nature of historical beginnings and lack of interest on the part of engineers-in-industry. (3) NSPE, though it talks considerably about the problems of engineers-in-industry, has done little.

Now what can NSPE do to accept and perform under the AIEE challenge. It can do two things: (1) It can provide certain concrete service and policy statements that will make it more attractive. (2) It can provide a larger category for membership in NSPE.

With regard to services, NSPE could (not necessarily should) set up reporting functions on unfair employment practices including accusations and rebuttals when such information is requested; maintain lists of employment opportunities and geographical areas where consulting practices are needed; encourage local chapters to engage in local salary surveys through or in conjunction with local "sounding-board" organizations or by themselves, etc. Now, when the membership is increased, say, threefold, disciplinary functions could be (again not necessarily should be) incorporated in the various areas.

I believe that in NSPE there should be two classifications: the licensed P.E. and the unlicensed P.E. As a practical matter, I believe that the majority of the present NSPE membership would not extend voting privilege to an unlicensed engineer—this without regard to whether the license was obtained by examination or by a "grandfather's" clause or whether an examination was required at all. Another practical matter is that an unlicensed engineer will not agree to allow an organization to speak for him without his authorization. Thus, in fairness to this engineer, let us extend to him voting privileges on all questions of referendum, questions of amendment and questions of constitutional changes not affecting voting regulations. Let him be eligible for appointive office. Let us withhold voting privileges only on elected offices at the national level, state level and perhaps at the chapter level. With experience in this type of organization, it might be deemed useful at a later time to have two categories of engineers: those who have consulting practices and are paid by clients, and those who are salaried such as engineers in industry, government and educators. At this time, full voting privileges should perhaps be extended to our unlicensed brothers.

One other point should be made. The original AIEE proposal implies, if not stated explicitly, that their system of organization is a first step in a series of two or perhaps three reorganizations toward unity. This exactly falls in line with present thinking of engineers. They do not know if they want an AEA of the type corresponding to the legal and medical professions. After all, the histories of these professions with respect to world population movements and with respect to the state of the art, and so on, do differ radically from the engineering profession. The usual system of compensation also differs. Further, engineers hear of certain restrictive practices by the other professional organizations which they don't know if they can countenance. Thus, let us provide an organization which can lead to unity and yet give us all some experience in what a unity organization means. An attempt to go too far in one step, I fear will lead to a bubble bursting around our ears.

The AIEE proposal on unity is sound. It provides an interim period of experience leading towards a more encompassing unity organization if desired. The question is: will NSPE meet the challenge by providing concrete services and by increasing the base of its membership? Any attempt to subordinate NSPE to EJC is viewed with disfavor.

S. E. WEIDLER, P.E.,
Scotia, N. Y.

Unity Among Engineers

Another proposal for unity among engineers is currently under consideration here. The idea of M. S. Coover, 1956-57 president of the American Institute of Electrical Engineers, it has approval of that organization's board and has been sent to its 50,000 members. In mid-July, it went to other societies for consideration, and has received the support of Presidents Ryan of the 42,500-member ASME and Barrett of the AIEE.

According to Mr. Coover's letter in *Electrical Engineering* for June, the AIEE (and by implication, the other four "founder" societies — ASCE, ASME, AIME, and AIChE) will limit its activities to the "advancement of technology in all branches of electrical engineering." Other activities will be handled thus:

1. The Engineers Joint Council will provide the medium for coordination and cooperation on technical matters transcending the electrical field, and will present to the public the position of the engineering profession.

2. The Engineers Council for Professional Development will provide the medium for guidance in engineering education.

3. National Society of Professional Engineers will provide the medium for the general promotion of the professional aspects of engineering in the eyes of the public and will be instrumental in the consequent enhancement of the economic status of engineers.

The third assignment is considered by many as the most significant. NSPE, with 42,000 members, 10 per cent of them young "engineers in training" in process of taking professional-license exams, thereby is expected to speak for the 250,000 members represented in 13 national societies and two affiliates belonging to EJC—to which it does not belong. Further, according to the Census Bureau, the nation has over 500,000 engineers, of whom 220,000 are now registered. (NSPE claims the census includes many who call themselves engineers but are not engineering graduates, says that actually only 300,000 are eligible to become professionals by registration.)

Obviously, a proposal so strongly backed as Mr. Coover's will receive serious consideration, but informed opinion is that it will ultimately fare no better than its predecessors. NSPE

appointed a committee at its recent Dallas meeting to study the proposal, but faces a difficult problem in the necessity of expanding its membership to represent all engineers if it sticks to legal registration as its accepted definition of a professional engineer.

ASCE, the original and oldest engineering society, has not considered the proposal officially, has no present plans to present it to its members. Some members feel this society would be reluctant to discontinue current professional activities of its active Department of Conditions of Practice. ASCE is the only founder society requiring an applicant to be practicing engineering actively at the time he applies for membership, is the one with the highest percentage of professional licenses, and presumably the one most heavily represented in NSPE.

AIEE and ASME would have to make only minor readjustments to follow the proposal. Both have stressed the technological all along. Their committees on, and activities in, professional conduct and registration are a long way from ASCE's extensive interest in these phases. AIChE (understood to be considering it) and AIME have offered no official reaction. Neither is very strong in NSPE. Nor have the other societies who are affiliated with EJC—they apparently have not been consulted.

EJC has not, and probably will not, become the "voice of the engineer" it is staffed to be, according to informed sources. Their opinion is that the EJC board is carefully avoiding any activities that could be construed as "influencing legislation," so it can attain favorable tax status (501-C-3) as a scientific or educational group. Its 501-C-6 standing now contrasts with the 501-C-3 status of its constituent societies. If the societies were to drop back to 501-C-6 status in the eyes of the Internal Revenue, the hoped-for tax-free gifts for the planned headquarters building in New York City might be endangered. NSPE has no such worries; it already has 501-C-6 tax status, hence freedom in political circles. It has continually sought to be spokesman for the engineering profession in public affairs.

AIEE's board has already recommended that qualified members register as professional engineers, so they can join NSPE, to overcome present obvious disproportionate representation in that group. But its proposal includes these words that strike at the heart of present NSPE policy: "NSPE should put itself in a position to represent the profession more completely by expanding its individual membership organization to include those qualified members of the profession whose work does not by law require registration as well as registered engineers."

—Article reprinted from *Product Engineering magazine*, September 30, 1957. Copyright by McGraw-Hill Publishing Co., Inc., 1957.

The following is a portion of an interview which *Consulting Engineer* magazine held with Louis R. Warner, president of the American Society of Civil Engineers, appearing in the September, 1957, issue.

Question: Mr. Howson, there has been much talk concerning a plan for true unification of the profession under EJC; what is going to happen?

Answer: First let me say that I believe EJC offers the best promise of a unified engineering profession that has been considered to date. EJC now embraces in its various classifications of Membership, some fifteen societies having an aggregate membership of about 300,000 engineers. Of the major engineering societies, only the NSPE remains outside of EJC.

There have been several proposals that were designed to bring the National Society of Professional Engineers and the Engineers Joint Council groups together. One recent suggestion which contemplates assigning particular aspects of society work to several organizations is, I think, a step in the opposite direction. Under this plan, the Founder Societies would confine their activities to technical aspects, Engineers Council for Professional Development would deal largely with engineering education, and NSPE would be principally professional in approach.

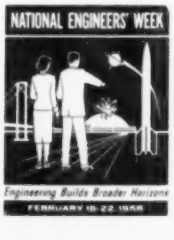
It appears to me that first EJC and NSPE must get together. To attempt now to assign particular fields of activity to each of the societies is to assume that they can get together—and that is too great an asumption at the moment. Personally, I think it will come. Probably NSPE and the Founder Societies are closer together now than they ever were, but there are still many problems of both personal and policy nature. There are some influential members of each group whose opinions no amount of argument is likely to change. It is a matter of time.

As to the assignment of particular fields of operation to certain societies or groups of societies, I am afraid it is not that simple. Perhaps I see this problem too much from the point of view of the engineer in private practice, but I feel that such an arrangement as has been proposed would not handle the special problems of the consultant. For example, the only engineering society that acts regularly to maintain enforcement of ethical standards is the American Society of Civil Engineers. If the ASCE is restricted to purely technical activities—publication of papers and the promulgation of technical codes and specifications—who is going to enforce those parts of our Code of Ethics that have to do with private practice? NSPE to date has taken no disciplinary action although that is in the scope of activities which some would allot wholly to that society. How can one society such as NSPE which thus far has not disciplined its own members for ethical infractions be expected to take over that responsibility for the entire profession?

Here is the point. NSPE subscribes to Canons of Ethics for Engineers—a code that applies broadly to all engineers whether with industry, government, or in private practice. ASCE and all the other Founder Societies also subscribe to the Canons. But ASCE, perhaps because it embraces a higher percentage of engineers in private practice than the other societies, feels that while the Canons are good, they do not go far enough. We added to them our own Code of Ethics, composed of ten points, each of which has to do directly with ethics related to private practice—such matters as competitive bidding, commission agents, self-laudatory advertising, competition with other engineers. The Canons do not even touch on some of these.

How, under present conditions, could NSPE deal with the use of commission agents, for example, when the Canons do not even mention them?

For reasons of this type, I think that ASCE, or any other society, cannot give up its work in the field of professional ethics, at least until it can be sure that something better will fill the void.



The aerial photo at the left shows Lansing, Mich., capital city of the State, which is adjacent to East Lansing, home of Michigan State University, and site of NSPE's spring meeting.

Sputnik Discussion Planned for Spring Meeting, Feb. 13-15

"SPUTNIK and the Engineering Profession" will be the theme of the spring meeting of the National Society, February 13-15, at Michigan State University, East Lansing, Mich. All meeting sessions are scheduled to be held at MSU's Kellogg Center.

The meeting will feature discussions on the problem of encouraging science and mathematics among high school students, the role of engineering educators, and participation of the Federal Government in engineering education.

Highlighting a banquet on the evening of February 14 will be an address by Dr. John A. Hannah, president of Michigan State University and chairman of President Eisenhower's commission on civil rights. NSPE President Garvin H. Dyer will preside at this affair, with Frederick Von Voigtlander, Michigan SPE president, serving as toastmaster. The "State Singers" of MSU will furnish the entertainment.

Also on the program during the three-day meeting of the Society will be discussions on salary increases for engineers in Federal service, teaching professional concepts at the college level, engineering ethics, and legislation concerning the engineering profession.

Fred L. Hendrick, an NSPE national director and Michigan SPE member, is general chairman of the affair.

The complete program appears on the opposite page, with the "Ladies Program" on page 47.

Advance Registration Form

To insure your reservations, fill in and return this form as soon as possible to:

Spring Meeting, National Society of Professional Engineers
Kellogg Center for Continuing Education
Michigan State University
East Lansing, Michigan

Name .....

Company or Organization .....

Business Address .....

City ..... **State** .....

Single Room—$7.50
Twin-Bed Room (shared)—$4.25

..... **room, nights of**

..... **Arrival time** **Departure time**

Please Do Not Send Money With This Form.

Here is the Program:

Thursday, February 13, 1958

6:00 p.m. *Opening Dinner* ..... Centennial Room
Presiding: President Garvin H. Dyer
Greetings: John D. Ryder, Dean of Engineering, Michigan State University
President's Report
Professional Meeting Convenes
Roll Call
Communications
Executive Director's Report
Treasurer's Report
Executive Committee's Report

Friday, February 14, 1958

8:30 a.m. *Sputnik and the Profession* ..... Lincoln Room A and B
Presiding: Clark A. Dunn, Vice President
Encouraging Science and Mathematics Among High School Students: Anatole Gruehr, Chairman, Engineering Preparation Committee; Harold P. Skamser, Director, JETS Program, Michigan State University
The Role of our Engineering Educators: George Branigan, Chairman, Education Committee
Reconsideration of Policy on Federal Government in Engineering Education: Clark A. Dunn, Vice President
Legislative Proposals: Clark A. Dunn, Vice President; Robert F. Miller, Chairman, Legislative Committee
Utilization Conferences: Paul H. Robbins, Executive Director

12:30 p.m. Regional Luncheons

1:30 p.m. *Professional Relations*
Presiding: Allan H. Kidder, Vice President
Discussion of AIEE Proposals: Allison C. Neff, Chairman, Improved Professional Activities Committee
Architect-Engineer Contract Forms
Architect-Engineer Code of Practice: William F. Moehlman, Chairman, Interprofessional Relations Committee
Professional Employment
Presiding: W. L. Hinderman, Vice President

Top photo: **The "State Singers" of MSU will entertain at the banquet, February 14.** ***Bottom photo:*** **Kellogg Center at the University will serve as headquarters for the three-day meeting.**

Beaumont Tower at MSU has a forty-four bell carillon which is played daily during the school year.

Teaching Professional Concepts at the College Level
NSPE Material to College Libraries
Criteria of Professional Employment to Engineering Seniors: Wayne E. Ault, Chairman, Engineer-in-Industry Subcommittee
Salary Increases for Engineers in Federal Government
Functional Section for Engineers in Goverment: Leonard White, Chairman, Engineers-in-Government Subcommittee
Increasing Concern for Ethics: Ezra Nicholson, Chairman, Ethical Practices Committee
Functional Section Activity: A. C. Kirkwood, Chairman, Functional Section for Engineers in Private Practice
Jenkins-Keogh Legislation: Milton F. Lunch, Legislative Counsel
Policy Operations
Presiding: Harry G. Kennedy, Vice President
Budget Revisions: Harry G. Kennedy

5:00 p.m. Social Hour ..... Walnut Hills Country Club

6:30 p.m. *Banquet* ..... Big Ten Room
Presiding: Garvin H. Dyer, President
Address: Dr. John A. Hannah, MSU President
Toastmaster: Frederick Von Voigtlander, Michigan SPE President
Entertainment: SMU's "State Singers"

Saturday, February 15, 1958

8:30 a.m. *Professional Development* ..... Lincoln Room A and B
Presiding: Clark A. Dunn, Vice President
Status of Model Law Revisions: Robert Williamson, Chairman, Registration Committee
Student Chapter Development: J. Neils Thompson, Chairman, Student Chapter Committee
Public Relations
Presiding: John B. McGaughy, Vice President
Engineer's Week Plans: John L. Bahr, Chairman, Engineers' Week Committee
Our Expanded Public Relations Activities: Paul Harlamert, Chairman, Public Relations Committee
Organizational Functions
Presiding: L. R. Durkee, Vice President
Report on Membership Campaign
Interim Report on Membership Contest: Harold Mosher, Chairman, Membership Committee
Location 1960 Meetings
Resolutions
New Business

1:00 p.m. *Adjournment*

The Ladies Program appears on page 47.

Pres. Eisenhower Salutes National Engineers' Week

ONCE again National Engineers' Week has been recognized by the President of the United States.

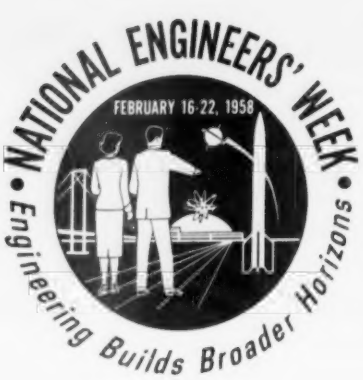
In a communication from the White House, President Eisenhower saluted the Week as calling attention to the work of our engineers, "especially their vital role in the success of the International Geophysical Year."

The President emphasized the theme of the 1958 Week, "Engineering Builds Broader Horizons." The "great cooperative effort" of the International Geophysical Year, he pointed out, inspires our young people to "choose the discipline of the engineering profession and render important service to our nation and the building of peace."

The tribute from Mr. Eisenhower was received as a telegram addressed to Garvin H. Dyer, NSPE president.

Reproductions of the President's communication, on a White House letterhead, have been sent to all state societies and local chapters of the National Society. Copies may be ordered, at no charge, from NSPE headquarters. The reproductions may be used in store window and other exhibits, on industrial and engineering department bulletin boards, and in industry mailings from local Engineers' Week committees. More than 10,000 copies of a similar tribute from President Eisenhower were distributed throughout the country during the 1957 National Engineers' Week.

Also available at no charge from the National Society are copies of the 12-page booklet prepared to stimulate industry participation in the events and objectives of the Week. Many NSPE affiliates are ordering several hundred copies of the booklet for distribution to local firms.



Here is the design for the National Engineers' Week lapel buttons available this year from NSPE. The black area in this reproduction is bright blue on the actual button.

The booklet is illustrated with photographs of previous Engineers' Week activities, and contains suggestions for industry cooperation. Covered in the booklet are such things as poster display, the use of Engineers' Week material in advertising and in house organs, guided tours for high school students, career conferences, exhibits, and professional meetings.

Other promotional aids offered by the National Society are a set of five 1-minute TV films, 15-minute tape recorded programs for radio, lapel buttons, a set of seven TV slides, posters, paper banners, gummed seals, a logotype carrying the 1958 Engineers' Week poster design, and newspaper articles prepared on "mats" and ready for insertion. A complete description of these aids will be found on the opposite page.

The 16mm color film "American Engineer" will be available again this year. This 20-minute film was shown to nearly 1,000 groups throughout the country during the 1957 Engineers' Week. The film may be reserved for the week of February 16-22, at no charge, directly from the producers —The Jam Handy Organization Inc., 2821 East Grand Boulevard, Detroit 11, Michigan.

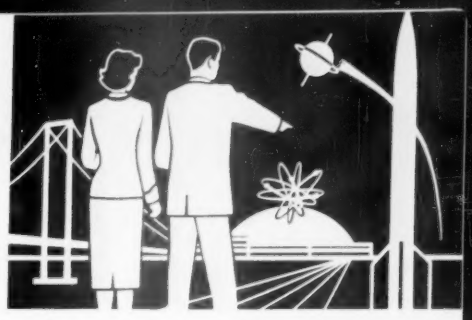
Fourteen leading figures in the engineering field are serving as sponsors of the 1958 National Engineers' Week. The sponsors are: Dr. James R. Killian, Jr., Allen B. DuMont, Major General Emerson C. Itschner, Charles F. Kettering, Clarence H. Linder, Thomas E. Murray, Granville M. Read, Rear Admiral H. G. Rickover, Royal W. Sorensen, Philip

(*Continued on page 45*)

Filling EW Orders

NSPE staffers fill orders for booklets, buttons, posters, and other promotional aids for the 1958 National Engineers' Week. Orders for all the promotional material are filled and shipped directly from National Society headquarters.

Use these aids for **NATIONAL ENGINEERS' WEEK...**



HERE ARE the basic promotional aids that will give dramatic impact to your program—the kind of impact that will result in public attention in local newspapers, and on radio and television programs. All these aids have been expertly prepared to portray engineering as building broader horizons for all of us. Use the handy order coupon below.

1. **ANIMATED TV FILMS:** A set of five 1-minute TV films, in animated form, designed to dramatize the 1958 Engineers' Week theme. Produced under expert supervision to meet network standards, these films feature tributes to civil, mechanical, electrical, and chemical engineers. All films will qualify for public service TV time during station breaks. A set of these films will give "TV impact" to your Engineers' Week program. Price: Set of five films, $25.

2. **"ENGINEERING BUILDS BROADER HORIZONS:"** A 15-minute tape recorded radio program telling the story of how engineering developments are behind every phase of the International Geophysical Year. Radio network performers dramatize the contributions of the engineer to the current scientific exploration of our planet. Excellent for use on public service time. Price: $6 each.

3. **LAPEL BUTTONS:** A high-quality lapel badge featuring the Engineers' Week poster design in bright blue on a white background. May be distributed to high schools, science clubs, and other groups. Each chapter or state society can set its own price for button sales. Prices: 100 to 500—15¢ each; 500 to 1,000—10¢; 1,000 to 3,000—7¢; 3,000 to 5,000—5¢; and over 5,000—4¢.

4. **SET OF SEVEN TV SLIDES:** Obtain extensive TV coverage through the Week with these slides displaying poster-type art work and printed copy calling attention to engineering. May be used during all TV station breaks as public service announcements. Price: $10 per set of 7 slides.

5. **POSTERS:** Colorful 9 x 11-inch pasteboard posters carrying the 1958 Engineers' Week design and theme. This is the basic promotional item for calling attention to the Week. Use on bulletin boards, in window displays, school exhibits, etc. Large size (18 x 22 inches) also available. Prices: 9 x 11, $4 per 100; 18 x 22, $5 per 100.

6. **PAPER BANNERS:** Excellent for display use. Three feet long by 6 inches wide. Has poster design and words "National Engineers' Week" in color. Price: $4 per 100.

7. **NATIONAL ENGINEERS' WEEK SEALS:** Use these brightly colored seals on all office mail from now through February 22. Poster design printed on 1½-inch gummed paper. Price: $3 per 1,000.

8. **NEWSPAPER MAT STORY ON ENGINEERING CONTRIBUTIONS TO THE INTERNATIONAL GEOPHYSICAL YEAR:** A feature article on how engineering developments in instruments, rocketry, and other fields are the basis for scientific study of the world around us during the IGY. Prepared on mat, ready for immediate insertion in daily or weekly newspaper. Price: 50¢ each.

9. **NEWSPAPER MAT STORY ON ENGINEERING AND OUR USE AND SUPPLY OF WATER:** A feature article on how engineers are involved in such problems as water purification, irrigation, flood control, hydroelectric power sites, harbor development, large city reservoirs, etc. Prepared on mat, ready for immediate insertion in daily or weekly newspaper. Price: 50¢ each.

10. **LOGOTYPE:** A metal cut of the 1958 poster design to insert in advertising, special sections of newspapers, industrial house organs, magazines, and other printed matter. All state society and chapter publications should have one. Price: $1 each.

11. **"ENGINEERING AND THE ATOMIC ERA:"** A re-issue of the 15-minute tape recorded radio program distributed last year. Just as timely this year. Network performers dramatize the engineering efforts behind atomic power, radioactive isotopes, and other applications of nuclear energy. Price: $4 each.

ORDER YOUR AIDS NOW!

National Society of Professional Engineers
2029 K Street, N.W.
Washington 6, D. C.
Sirs:

Please rush me items indicated. I enclose a (check.....) (money order.....) in the amount of $.....I understand remittance must accompany order.

Name .....
(PLEASE PRINT)

Address .....

City ..... **State** .....

1. _____ One-minute TV films @ $25 per set.
2. _____ Radio tape, "Engineering Builds Broader Horizons," @ $6 each.
3. _____ Lapel buttons. 100-500 @ 15¢ ea.; 500-1,000 @ 10¢ ea.; 1,000-3,000 @ 7¢ ea.; 3,000-5,000 @ 5¢ ea.; over 5,000 @ 4¢ ea.
4. _____ TV slides. Set of 7 slides @ $10 per set.
5. _____ Posters, regular size, @ $4 per 100.
   _____ Posters, large size, @ $5 per 100.
6. _____ Banners @ $4 per 100.
7. _____ Seals @ $3 per 1,000.
8. _____ Newspaper mat story on engineering contributions to IGY @ 50¢ ea.
9. _____ Newspaper mat story on engineering and use and supply of water @ 50¢ ea.
10. _____ Logotypes @ $1 ea.
11. _____ Radio tape, "Engineering and the Atomic Era," @ $4 ea.

Court Rules Engineering Firm Not Covered by Wage-Hour

In a recent significant decision, the Fourth Circuit Court of Appeals has affirmed the holding of a lower Federal District Court (see AMERICAN ENGINEER, March, 1957) that a consulting engineering firm is not covered by the Wage-Hour Act. Coverage under the Act is extended, with certain execptions, to all employees engaged in the production of goods for interstate commerce, or in interstate commerce itself.

This case arose from a complaint against the consulting firm of Lublin, McGaughy and Associates of Washington, D. C. and Norfolk, Va., charging violations of certain sections of the Act relating to the payment of time and one-half for all workweeks in excess of forty hours. The District Court Judge dismissed the complaint, and from that decision the present appeal was taken.

The Government's case was concerned primarily with overtime payments to the firm's draftsmen, fieldmen, clerks and stenographers, rather than employees engaged in a professional capacity who are expressly exempted by a section of the statute. The Government's contentions provided the Court with three questions for determination: 1) Are the drawings, plans and specifications prepared by the employees of the firm "goods" and does their preparation constitute the "production of goods for commerce" within the meaning of the Act; 2) Are the employees of the firm who participate in interstate travel and communications in connection with the firm's activities "engaged in commerce;" and 3) is a large part of the work of the firm's draftsmen, fieldmen and clerical employees so closely related to projects connected with interstate instrumentalities so as to bring them within the "in commerce" coverage of the Act?

In disposing of the contention that plans, drawings and specifications are "goods;" Circuit Judge Soper, speaking for the three member panel relied heavily upon the 1948 Maryland Federal Court decision in *McComb v. Turpin* which declared that even the broadest definition of "goods" could not be construed to apply to the plans or drawings of a consulting engineer. Such plans, according to the *Turpin* case, are only a "physical embodiment in words of professional conclusions." Quoting again from Judge Chesnut's well-reasoned opinion in the *Turpin* decision, the Court said: "Certainly the word 'goods' could not be construed to include professional advice and its definition should not be construed to include the typewritten or mechanical expression by which the advice is given. These plans, drawings and specifications are not themselves the subject of barter or sale, but only the written embodiment of professional advice, and incidental thereto. They are specifically prepared to meet the particular problem of a specific client and are not sold or offered for sale to the public generally."

The present decision distinguished plans and specifications from telegraph messages, which have been held to be "goods" within the meaning of the Act, by pointing out that telegraph messages are essentially a subject of commerce to be transported interstate, whereas the purpose of plans and drawings of a consulting engineer is merely to present his ideas and advice in permanent form. As stated by Judge Soper, "The copies of the plans that were made and sent out for the convenience of the clients and their bidders were not transported as subjects of commerce but in order to show the interested parties the sort of construction that was required; and the mere fact that the documents crossed state lines did not alter their inherent nature."

In support of its contention that the interstate travel and communication of the firm's employees constituted an engaging "in Commerce;" the Government pointed to a series of cases which have held that the transportation of documents and records as well as the travel of employees from state to state are forms of interstate commerce which subject the participants to the Act. The Court, however, was able to distinguish those cases from the present case involving employee activities of a consulting engineer. Finding that the business of the consulting engineer is essentially local in nature, the Court said: "It is manifest however, notwithstanding this well established line of authority, that the mere use of the mails and of transportation facilities across state lines is not necessarily interstate commerce. There must be some relation to a business which is interstate in character. This is found most clearly where the very essence of the business is interstate commerce itself, as in the sending of telegraph messages, and it also exists where the employer's business is interstate in character *** in the course of which interstate communication is a material part. But where the business is essentially local and there is no production of 'goods,' communication which is merely incidental to the local enterprise cannot be classed as commerce." The inter-office communications in this case and the activities of the fieldmen all related to the production of plans and specifications and, the Court concluded, partook of their intrastate character and therefore could not be fairly characterized as commerce between states.

North Carolina Society of Professional Engineers — Annual Meeting, January 9-11, 1958, Robert E. Lee Hotel, Winston-Salem, North Carolina.

Idaho Society of Professional Engineers—Annual Meeting, January 16-18, 1958, Hotel Boise, Boise, Idaho.

Wisconsin Society of Professional Engineers—Annual Meeting, January 17-18, 1958, Hotel Schroeder, Milwaukee, Wisconsin.

Texas Society of Professional Engineers—Annual Meeting, January 23-25, 1958, Blackstone Hotel, Tyler, Texas.

Oklahoma Society of Professional Engineers—Annual Meeting, February 7-8, 1958, Skirvin Hotel, Oklahoma City, Oklahoma.

NSPE Spring Meeting—February 13-15, Kellogg Center, Michigan State University, East Lansing, Michigan.

Minnesota Society of Professional Engineers—Annual Meeting, February 19-21, 1958, Nicollet Hotel, Minneapolis, Minnesota.

Tennessee Society of Professional Engineers—Annual Meeting, February 21-22, 1958, Peabody Hotel, Memphis, Tennessee.

New Mexico Society of Professional Engineers—Annual Meeting, February 22, 1958, La Fonda Hotel, Sante Fe, New Mexico.

Iowa Engineering Society — Annual Meeting, February 25-26, 1958, Hotel Ft. Des Moines, Des Moines, Iowa.

Kansas Engineering Society—Annual Meeting, February 27-March 1, 1958, Jayhawk Hotel, Topeka, Kansas.

NSPE Annual Meeting—June 11-14, 1958, Chase-Park Plaza, St. Louis, Missouri.

Finally, the Government contended that certain of the employees were covered by the Act because of their work which related to projects for the improvement, enlargement or repair of instrumentalities of interstate commerce such as military installations, airfields, radio facilities, turnpikes and roads and terminal facilities. Acknowledging that the work of certain clerical or drafting employees may be covered by the Act where their activities are "directly" related to instrumentalities of interstate commerce, Judge Soper was explicit in pointing out that "There is, however, no clean-cut holding that the work of employees of independent architects [engineers], such as are before us in this case, is 'commerce' under the Act."

Discussing causation and the link-in-the-chain-of-events theory, the Court said that "It may be that activities of the employees in question constitute an indispensable link in the chain of causation whereby instrumentalities of commerce are extended or improved; but it does not follow that their work is so closely connected with interstate commerce as to be a part of it. In determining the question, the character of the work of the employees rather than the occupation of the employer is the controlling factor, but the occupation of the employer must nevertheless be taken into consideration, for the Act does not attemp to regulate local activity. *** But the architectural [engineering] work itself was local and of necessity gave color to the activities of their subordinates and took them outside the scope of the statute." In other words, the employees involved in this case did not have such a close and immediate tie with interstate commerce or the production of goods for such commerce as to be covered by the Act.

The Court was careful to point out, however, in its discussion of direct or remote connections with interstate commerce, that in certain cases employees may participate so actively at the actual site of construction as to be covered by the Act because their work could then be held to be "directly" related to interstate commerce, and that nothing in this decision is intended to preclude further proceedings as to them. There was not sufficient evidence in this case, though, to show that any of the employees of the firm engaged in such "on-site" activities of a nature that would sanction their coverage under the Act.

The effect of this decision on the entire problem area of consulting engineers and the Wage-Hour Act cannot be minimized. It represents, for the first time, an appellate court holding that consutling engineer services do *not* come within the coverage of the Act. It is not known yet whether the Government will seek to appeal this decision to the Supreme Court.

For a complete review and analysis of all legal and legislative developments bearing upon the relationship of the consulting engineer to the Wage-Hour Act, see the story which follows.—***End.***

Courts, Congress and Consultants

As a result of the rendition of the Appeals Court decision in the *Lublin, McGaughy* case (reported on the opposite page) as the latest development in the relationship of consulting engineers to the Wage-Hour Act, there now exists a situation in which two Federal Courts of Appeal have reached contrary conclusions in cases arising out of complaints filed by the Government against consulting engineering firms for violation of certain provisions of the Wage-Hour Act. In 1955 the Eighth Circuit Court of Appeals, having in its jurisdiction the states of Arkansas, Iowa, Minnesota, Missouri, Nebraska, and North and South Dakota, decided in the case of *Mitchell v. Brown* that the employees of a consulting engineer were engaged in activities that would justify the conclusion that they were engaged "in commerce" and thus subject to the provisions of the Act. In the *Lublin, McGaughy* case, however, the Fourth Circuit Court of Appeals, covering Maryland, Virginia, West Virginia and North and South Carolina, held that the employees in question were neither engaged in the production of goods for commerce nor engaged directly in interstate commerce itself, and thus were not covered by the Act. Until this apparent conflict of circuits is resolved, either by legislative amendment or a Supreme Court decision, consulting engineers throughout the nation are faced with uncertainty as to whether or not their firm's activities are such as to amount to the production of goods for commerce or an engagement in commerce.

So that consulting engineers may be fully informed on all aspects of this problem, it is appropriate to detail at this point the legal developments preceding the present situation and the actions taken by NSPE to rectify and resolve this conflict.

The first court test involving a consulting engineer and the Wage-Hour Act arose in 1948 when the Government brought suit against Turpin, Wachter & Associates of Baltimore charging them with a violation of the Act. The complaint in that case *(McComb v. Turpin)* was dismissed by District Judge Chesnut who held that the rendition of professional consulting engineering services did not come under the provisions of the Act, inasmuch as the preparation of plans and drawings does not constitute the production of "goods" for commerce. Furthermore, the work of the employees did not have the required close and immediate tie with the production of goods so that coverage could be sustained, Judge Chesnut said. This Federal District Court decision was not appealed by the Department of Labor.

In 1954 a complaint was filed against the Brown Engineering Co. of Des Moines, Iowa, charging a violation of the Wage-Hour Act. The Federal District Court, relying upon the *Turpin* decision, was of the opinion that the firm's employees were neither engaged in commerce nor in the production of goods for commerce, and concluded that "The effect of defendant's activities and those of his employees in commerce is too far removed from his main activities to have more than a remotely incidental effect." Accordingly, the complaint was dismissed. The Government, however, did appeal this decision, and on appeal, the decision was reversed by the Eighth Circuit Court. In its reversing opinion, the Court said: "Viewing the activities of defendant's employees in a practical aspect in relation to the whole construction project, and giving to the Fair Labor Standards Act the liberal interpretation required, we are convinced that the stipulated facts in this case demand a holding that the employees were engaged 'in commerce' and that the trial court's conclusion to the contrary was erroneous."

Brown Engineering Co. appealed the Eighth Circuit's decision to the

(Continued on page 46)

Jenkins-Keogh and the American Thrift Assembly

By Robert C. Vogt, P.E.,

Consulting Engineer

Editor's Note: Mr. Vogt of the Cincinnati firm of Vogt, Ivers, Seaman & Associates is the NSPE representative on both the Board of Directors and the Executive Committee of the American Thrift Assembly.

COINCIDENT with the convening of the 2nd session of the 85th Congress on January 7, 1958, the House Ways & Means Committee is scheduled to begin a series of comprehensive tax revision hearings on proposals to amend the Internal Revenue Code. High on the agenda are the Jenkins-Keogh bills which would permit self-employed persons to deduct a portion of their income for the establishment of a private retirement fund.

While similar proposals have been before Congress for the past ten years, there were many technical objections raised to these measures, and for this reason their legislative progress was negligible. Since the beginning of the 85th Congress in January, 1957, however, revised and refined bills to overcome these objections have been introduced. Among these are the proposals of Representatives Thomas A. Jenkins, Republican of Ohio, (H. R. 9) and Eugene J. Keogh, Democrat of New York, (H. R. 10). These identical bills would permit self-employed persons to set aside a portion of their income for retirement purposes on a tax-deferred basis. This means that a self-employed citizen in business, agriculture or in the professions, including professional engineering, could deduct annually from gross income an amount up to ten per cent of his self-employment income, not to exceed $5,000 per year, invested by him in a private restricted retirement fund or paid in as premiums to purchase an insurance policy with retirement features. An individual who has reached fifty years of age before the effective date of these proposals, would be allowed to deduct an additional amount, based upon his actual age, to help him build up an adequate interest in the fund or annuity plan.

While the contributions plus interest can be withdrawn at any time, the bills favor withdrawal commencing at age sixty-five, at which time the payments received are taxable. Thus, the taxes which a self-employed person would normally have paid on the sums contributed to a private retirement plan are deferred until he starts receiving payments upon his retirement, when his over-all tax rate is generally less. The net effect of the Jenkins-Keogh measures is an attempt to equalize the opportunities of these self-employed persons with those employed by corporations or other firms which have established valuable retirement plans for their employees.

Shortly after the introduction of H. R. 9 and 10 in January, 1957, the American Thrift Assembly was organized to spearhead and coordinate efforts to have the Jenkins-Keogh bills enacted into law. Led by the American Bar Association, an organizational meeting was held in Washington, D. C., which was attended by representatives of the self-employed in trade, business and the professions, including engineering. As a result of this meeting, the American Thrift Assembly was created as a voluntary organization and now represents 196 national associations and professional societies. In addition, there are chairmen for each state, the name and address of whom will be supplied upon request.

Since its inception the ATA has vigorously engaged in many activities seeking to obtain a measure of tax equality for America's ten million self-employed citizens. Among these activities have been contacts with Congressmen, the printing and mailing of thousands of brochures and pamphlets, the preparation of economic reports, coordinating the efforts of hundreds of local ATA groups, the holding of meetings and conferences and countless other smaller but extremely vital projects.

One indication of the success thus far of the American Thrift Assembly is a reliable grass-roots survey which indicated that an overwhelming majority of the House of Representatives would vote for legislation to provide tax deferment on private pension payments by the self-employed, when brought to the floor of the House. In addition, at the close of the 1st session it was indicated that a majority of the House Ways & Means Committee members were in favor of the principle of the Jenkins-Keogh bills. Furthermore, in cooperation with its member organizations, ATA has arranged for a qualified economist to appear as a witness at the current hearings who will discuss the logical economic aspects of the bills and be available for questioning by the Committee. Some of the member associations, including NSPE, will prepare supporting briefs and be available to submit testimony and detailed data. At the conclusion of these tax revision hearings, the biggest job of the ATA will still lie ahead. That will be to have the Jenkins-Keogh measures favorably reported out by the Committee and enacted into law.

The activities carried on thus far and those remaining cost money. The National Society of Professional Engineers has consistently endorsed this legislation and has actively cooperated with other member organizations of the American Thrift Assembly. It is significant to note that professional engineers have been accorded an equal place of responsibility and recognition in this endeavor, along with the doctors, lawyers, dentists, accountants and others. The groups have recognized their obligations and have contributed proportionately to members affected. The American Bar Association and the American Medical Association each have contributed over $15,000 to the ATA. The American Institute of Certified Public Accountants has pledged $12,000. NSPE has given $1,500. In addition, approximately $2,300 more has been contributed by consulting engineers and consulting engineering firms to a special fund administered

(*Continued on page* 47)

An *American Engineer* SPECIAL REPORT

Re: Unfilled Teaching Positions in Engineering

● There are more unfilled college and university teaching positions in engineering than in any other field, according to a study conducted by the Research Division of the National Education Association. Of 761 institutions participating in the study, 383 reported 1196 unfilled positions in all fields in 1955-56 or 1956-57. Engineering topped the list with 226. The physical sciences were a close second with 225 teaching vacancies, followed by 148 unfilled posts in mathematics, thus confirming the generally accepted belief that these are the fields of greatest teacher shortage at the college level.

Although there were twenty-four general fields reporting unfilled positions, engineering, the physical sciences, and mathematics accounted for more than fifty per cent of all the vacancies with a total of 599.

In a booklet entitled, *Teacher Supply & Demand in Colleges and Universities*, the NEA points out that this evidence coincides with the widely advertised shortage of high school teachers of the physical sciences and mathematics. And, they add, that with the growing shortage at the college level, the shortage in the supporting elementary and high schools will be compounded.

Here are some statistics taken from the study on the number of institutions reporting teaching positions unfilled in 1955-56 or 1956-57:

General field of teaching	*Institutions*	*Vacancies*
Agriculture	16	28
Biological Sciences	21	29
Business and Commerce	61	86
Education	51	69
Engineering	89	226
English	23	42
Fine Arts	23	31
Foreign Languages	12	15
Geography	6	6
Health Sciences	34	80
Home Economics	28	31
Industrial and Vocational Arts	10	10
Journalism	4	4
Law	5	6
Library Science	8	8
Mathematics	123	148
Philosophy	3	4
Physical and Health Education	15	15
Physical Sciences	166	225
Psychology	23	24
Religion	8	8
Sciences (not specified)	10	14
Social Sciences	55	68
Fields not specified	8	19

Among other interesting items contained in the NEA booklet is a field-by-field division of those gaining doctor's degrees in 1955 and 1956 who entered new occupations during the year of graduation. On the average, 57.3 per cent entered educational and 42.7 per cent entered non-educational occupations, but this division means little until it is applied separately to those in each field. Then, with a definite percentage dip, it is shown that educational service loses about three out of four graduates in engineering and three out of five in physics and the other physical sciences. How to retain these doctor's degree graduates is the challenge facing the institutions of higher education today. They need to protect the quality—as often urged by NSPE—of their instructional programs as well as increase their supply of competent candidates.

Constitutional Amendments As Proposed by NSPE Board

THE Board of Directors has approved for submittal to the membership a number of constitutional amendments. These proposed amendments are the result of extensive study by the Constitution and Bylaws Committee, the Committee Structure Committee, and of recommendations from state societies. These proposed constitutional changes will be implemented by a number of bylaw changes which the Board approved to go into effect under the condition that the membership approved the constitutional amendments.

Shortly after January 10, 1958, you will receive a ballot containing the names of the nominees for national officers for the year 1958-59, and the list of proposed constitutional amendments on which you are asked to vote. Under each of these proposals is a brief explanation of the purpose of such amendment. The following is a detailed explanation of these proposed changes for your assistance in making your decision.

Ballot Reference: Article IV, Sections 4 and 6

In early 1957 the membership was balloted and overwhelmingly approved a constitutional amendment which provided that engineers registered under the laws of a Canadian province may enjoy membership-at-large status in NSPE. At the 1957 annual meeting the Michigan Society presented a resolution requesting that the Constitution be further amended to provide that engineers registered in Canada could become members of NSPE through an affiliated state society.

Implementing this resolution Section 4 of Article VI is recommended to be changed so as to include in the definition of a professional engineer "a person holding a valid license or certificate of registration as a Professional Engineer from a province of the dominion of Canada."

To provide eligibility of registered Canadian engineers for membership through state societies, the Committee proposed that Section 6 of Article IV be amended to include the following language:

A Professional Engineer who is registered according to the laws of any of the Provinces of Canada, may obtain or retain membership in the National Society through membership in a Member State Society, subject to the membership requirements of the Member State Society. A Professional Engineer, if he so desires, may be a member of any number of Member State Societies provided he meets the membership requirements of said Member State Societies.

You will find these two proposed changes as the first two items on your ballot.

Ballot Reference: Article VI, Sections 1 and 2; Article VIII—Section 2; Article XII

A certain amount of confusion has resulted from the use of the term *Annual Meeting* in the Constitution to mean two separate things. One meaning refers to the June meeting itself; the other to the meeting of the various state representatives at the June meeting.

In order to clearly distinguish between these functions the Constitution and Bylaws Committee has recommended that the term *Annual Meeting* should be retained where it is used to designate the yearly June meeting itself, with that portion of the June meeting wherein the state representatives gather changed to read a *Meeting of Delegates.*

These are merely changes in terminology; no substantive changes in any of the Articles or Sections above would be effected.

Ballot Reference: Article VII, Sections 2 and 3

For the purpose of more efficient and less-time-consuming handling, the Constitution and Bylaws Committee recommends that the election of the Nominating Committee be transferred from the Meeting of Delegates to the Meeting of the Board of Directors. Also, that the presentation of the slate of nominees be made to the Board of Directors at the regular June meeting rather than to the Meeting of Delegates at this same time.

In practice, the same persons representing the individual state societies at the Board of Directors meeting also act as the state representatives at the Meeting of Delegates. Consequently, this is simply a transfer of function to the same group of representatives, but acting in a different capacity.

Specifically, the proposed amendments are as follows with the italicized words indicating the proposed changes:

Article VII—Section 2

Delete Section 2 of Article VII and substitute the following:
Section 2. There shall be a Nominating Committee consisting of one member from each of the administrative areas of the United States who shall be elected *by the Board of Directors* at the Annual Meeting *of the Board*. The Chairman shall be one of the three immediate Past Presidents. At least two other members of the Committee shall be *National Directors* at the time of their election. No officer shall be eligible for membership on this Committee, and the Committee shall not nominate one of its members for an office.

Article VII—Section 3

Delete Section 3 of Article VII and substitute the following:
Section 3. The Nominating Committee shall prepare a slate of nominees for the several elective offices for the ensuing administrative year. The Nominating Committee shall also present *to the Board*, at the Annual Meeting, a list of nominees for the Nominating Committee for the following year. The Nominating Committee shall secure the ratification of each candidate for an office from the Member State Society of which the nominee is a member.

Ballot Reference: Article XI (New)

The present Bylaw 22 provides for the formation of Functional Sections. It was felt that the *authority* for the creation of functional sections should be spelled out in the Constitution itself, with the bylaw serving as a detailed implementation of this basic constitutional authority.

After study of this matter, the Constitution and Bylaws Committee recommends that a new Article XI entitled *Functional Sections* be added to the Constitution. The present Article XI would become Article XII, with the present Article XII becoming Article XIII.

The proposed new article reads as follows:

"Article XI—Functional Sections
Section 1. To further the objectives of the Society, establishment of Functional Sections is authorized.
Section 2. The Board of Directors may sanction the creation of, or order the dissolution of, Functional Sections according to provisions therefore defined in the Bylaws."

N.S.P.E. Believes

ETHICS FOR ENGINEERS

BY PAUL H. ROBBINS, P.E.

Executive Director

N.S.P.E.

AMONG the many definitions of a profession there runs a common terminology to the effect that for recognition a professional group must subscribe to a creed or canons of ethics. The engineering profession has long recognized this requirement, and various groups within the profession from time to time have spelled forth their beliefs in good practice via codes and canons and creeds.

The Canons of Ethics, compiled by the Engineers' Council for Professional Development, and adopted by the National Society of Professional Engineers as well as numerous other engineering groups, sets forth in a foreword and twenty-six canons, some of the basic principles of professional behavior. Despite this fine presentation, gray areas yet remained; and to further facilitate an understanding of the many facets of professional behavior, the NSPE Committee on Ethics developed additional rules of professional conduct to supplement the Canons. NSPE has recently published a small booklet containing the Canons, NSPE's short Creed, and these rules of professional conduct. The demand for this booklet has far exceeded expectations, and it is already in its second printing.

The profession has long been concerned that students and others about to enter the profession be aware of the high standards of professional conduct which are necessary for the recognition members of the profession desire. But more than mere endorsement or acceptance of a canon or creed of ethics is needed if the profession is to be recognized as subscribing to ethical standards. Dean Clement J. Freund in a foreward to this booklet states: "The highest type of engineer is proud of his profession. He is proud of his competence, proud of what he can do. . . But the highest type of engineer is proud of something else which is more important. He is proud of the good he does in the world. He is proud that he serves the people; he is proud that ministry in the community is his principal objective. . . He serves the people in compliance with severe standards of honor and deportment." In other words—ethics is an attitude.

NSPE as a professional society feels it has an important responsibility to continually emphasize the need for this attitude among members of the profession. It is for this reason that NSPE is making available to its state societies for distribution to engineering students this brochure on ethics. It is for this reason that NSPE is deeply concerned with the inculcation of professional concepts among all engineers. This thread of professionalism undergirds all of NSPE's activities.

But merely subscribing to principles is not enough. They must be put into effect. How can the profession adequately guard against the individual who identifies himself as a member of the profession, yet in practicing these services violates the principles for which the profession stands? Here again opportunity is provided the professional societies to be of service. Unfortunately, the service the Society can render is in almost direct proportion to the degree the members of the Society are willing to stand up and be counted on ethical matters.

NSPE is fortunate, indeed, in providing a mechanism for adequately policing ethics; but the degree to which it is successful is dependent upon the degree to which the members of the profession use the mechanism available. NSPE with its three-level organization believes that ethical matters should first attempt to be resolved at the local level, where personal contact not only enables first-hand investigation of complaints but an opportunity to deal directly with the alleged violators. Many NSPE chapters are providing excellent leadership and review of ethical matters in their local area.

If the matter is of more widespread concern, or of such a nature that it cannot adequately or satisfactorily be handled by chapter action, the state society activity is available for handling such cases. Without exception, each of the state societies affiliated with NSPE has committees concerned with these problems. Broader problems of ethics, involving principles and policies, have access and opportunity for resolution at the national level with a national committee on ethics and a national Board of Ethical Review.

Rightfully or wrongfully, the considerable work of the professional society at the three levels in the field of policing ethics receives little publicity. Many ethical violations are handled by personal contact with the individual involved. Others require more formal complaint and review. In many cases these, too, are resolved without publicity. It is only the more spectacular cases which find their way into print. This should not be interpreted to mean, however, that policing of ethics is either being ignored or is ineffective.—***End.***

With Our Members . . .

Pres. Dyer Attends

Arizona Engineering Societies Hold Joint Meeting at Phoenix

Members of seven Arizona engineering societies recently held a joint meeting in Phoenix under the sponsorship of the Arizona SPE and the Arizona Council of Engineering and Scientific Associations.

Among the highlights of the meeting was an address by Garvin H. Dyer, NSPE president, who spoke on unity at a banquet attended by 240. Principal speaker at the banquet was Krafft Ehricke of Convair-Astronautics who spoke on rockets and space travel.

The final day of the two-day affair was devoted to an Industry-Engineering-Education Symposium at Arizona State College in Tempe. President Dyer talked at a luncheon on the needs of present-day education and the problems of industry and the schools of higher learning.

In addition to the Arizona SPE, the following groups participated: American Institute of Electrical Engineers, American Society of Heating and Air-Conditioning Engineers, American Society of Civil Engineers, American Society of Mechanical Engineers, American Association of Engineers, and the American Chemical Society.

(See story below)

Arizona Joint Meeting

Officials gather at the Arizona meeting, *top photo*, l. to r.: T. A. Phillips, chairman, Arizona Council of Engineering & Scientific Associations; Krafft A. Ehricke, assistant to the technical director, Convair Astronautics; NSPE President Dyer, and Walter A. Biddle. *Bottom photo*, l. to r.: Mr. Dyer, Earnest W. McFarland, governor of Arizona, and Walter A. Biddle, president, ASPE.

Presents Check

Marcus R. Durlach, Jr., left, NSPE national director from South Carolina, presents a check from the National Society to Alton T. Riddick, president, SCSPE. The check was awarded the S. C. Society on a basis of membership growth during the past fiscal year.

Erie County Chapter Hears Milton F. Lunch

Milton F. Lunch, NSPE legislative counsel, spoke on "Engineers and Unions" at the October meeting of the Erie County Chapter of the New York State Society.

He pointed out the five types of unions seeking to represent engineers are the trade unions, quasi-trade unions, white collar unions, quasi-professional unions, and the "professional" unions. Mr. Lunch classified Engineers and Scientists of America (ESA) as in this latter group. He stressed that some ESA units have worthwhile objectives for their members in professional interests, but if, as they say, they do not want strikes, they lose their effectiveness as a collective bargaining agent and are not consistent with the union idea.

He noted that policy statements issued by NSPE try to clarify and point up constructive professional policies for the benefit of engineers and management.

In summing up, Mr. Lunch stated that the way to better labor-management relations as far as engineers are concerned is on a cooperative, voluntary basis which is directly opposed to the coercive, involuntary, negative approach of the unions which separates employers and employees instead of bringing them closer.

The New York State Society is attempting to co-sponsor conferences of university engineering and industrial professional people to find ways and means to conserve our country's engineering manpower.

Massachusetts Chapter Hears Guest Speaker

Dean M. Lawrence Price of Worcester Polytechnic Institute, speaking recently before the Central Massachusetts Chapter of the Massachusetts SPE, noted the constant need for revising engineering curriculums to keep up with scientific advancements.

Also at the meeting, Vice President Chester J. Lake introduced the following elected committee chairmen: C. F. Hawley, legislative and by-laws; H. A. Racicot, civic affairs; H. P. Matiolli, education; R. H. Merritt, membership; R. D. Chenez, program; J. P. Karpuk, publicity; J. C. Danec, Engineers' Week, and P. J. Joyce, young engineers.

In honor of their past work, David R. Bashaw, Jr., chapter president, awarded cuff links to past presidents, Phillip R. Delphos, Fred E. Bailey, Max H. Kuhner, and Ronald C. MacIntyre. (See photo at right)

Massachusetts Meeting

—Photo Courtesy of the *Worcester Telegram*

Dean M. Lawrence Price, second from left, was the main speaker at a recent meeting of the Central Massachusetts Chapter. On his left is David R. Bashaw, Jr., chapter president, and on the right are past presidents Fred E. Baily and Phillip R. Delphos.

Certificate Awarded

A certificate for outstanding service was presented to Norris T. Sherry at a recent meeting of the Savannah Chapter, GSPE. Mr. Sherry, who is a past president of the Savannah Chapter, was retired as city engineer some time ago because of ill health. In picture, l. to r., are: Malcolm T. McKenzie, president, Savannah Chapter; Walter Lee Mingledorff, mayor of Savannah; and a past president of Savannah Chapter, Joseph A. Logan, Chatham County engineer, and Engineers' Week chairman.

Monsignor MacDonald Speaks to N. Y. Chapter

Monsignor Ronald B. MacDonald, Zone 1 director of the New York State Society of Professional Engineers, was the featured speaker at a meeting of the Broome Area Chapter of the Society recently.

Monsignor MacDonald holds a unique position in a combination of two professions, serving as a clergyman and as an engineer. Another unusual fact is that he has degrees in electrical, mechanical, and civil engineering. He is a registered professional engineer and is director of the Diocesan Building Office of Brooklyn. He is a former engineering assistant to the Diocesan Building Commission of the Diocese of Brooklyn.

Monsignor MacDonald is a past president of the Kings County Chapter of the State Society and a member of the honorary engineering fraternities of Tau Beta Pi and Pi Tau Sigma.

The new outlook for professional engineers and the implications of a growing professional society were the topics discussed by Monsignor MacDonald.

Montana Chapter Receives Charter

A "Charter Presentation Night" was held recently for the Helena Chapter of the Montana SPE. The Helena Chapter was the first chapter organized following the affiliation of the Montana Society with NSPE. There were fifty charter members in the Chapter.

Dix C. Shevalier, national director and charter member of the Helena Chapter, acted as toastmaster. Robert L. Olund, president of the State Society, presented the charter to Jack Y. Barnes, chapter president.

Other officers of the Chapter are: T. Arthur Nay, first vice president; Charles F. Poole, second vice president; John H. Morrison, state director, and Arthur W. Clarkson, secretary-treasurer.

Regional Pennsylvania Meeting Held Recently

A regional meeting of the Pennsylvania SPE was held recently in Lancaster honoring those who successfully passed the state registration exams in January and June of 1957.

Certificates of registration were presented to the large group by Francis S. Friel, a member of the State Registration Board. E. Dent Lackey, director of public relations for the Carborundum Company, Niagara Falls, N. Y., spoke to the group on "Men to Match this Age."

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Restricted to Registered Professional Engineers . . . Directory Continued on Next Page

Wisconsin State Society Sponsors Essay Contest

A state-wide essay contest for Wisconsin high school students on "The Future in Engineering for Me" opened in December under the sponsorship of the Wisconsin SPE. The contest is timed so that the winners will receive their cash awards during Engineers' Week.

Each chapter in the State will select a first place winner from its area and present this student with a $25 savings bond. The second best entry from each chapter will be given $10 in cash. The first place winner from each chapter then becomes eligible for consideration for the $50 savings bond to be given the State winner. All prize money is being supplied by the Wisconsin SPE.

About 550 high schools in the State were asked to participate in the contest which began December 16 and will close January 21.

News Gets Stale
Stale News Isn't Printed . . .

SO*—Stories and photos for the *American Engineer* about outstanding chapter or state society events should be submitted *immediately after the events take place.

Virginia Fall Meeting

—Photo Courtesy *The Roanoke Times*

The annual fall meeting of the Virginia SPE was held at the Hotel Roanoke in Roanoke. The meeting was a joint affair with the Virginia Chapter of the AIA. At the banquet the VSPE presented three outstanding service awards. They went to (shown above) l. to r.: I. Russell Berkness, of Richmond, Frank R. Murray, of Newport News, and Herbert Manuccia, of Alexandria. The annual meeting was held also at which time new officers of the Virginia SPE were elected. Installed as president was Edgar B. Boynton, who was first vice president. Charles A. Goodwyn, of Norfolk, moved up from second vice president to first vice president. Fred T. Morse, of Charlottesville, was elected second vice president, and Hyman J. Fine, of Norfolk, was re-elected secretary-treasurer. Dan H. Pletta, of Blacksburg, was re-elected a national director and Mr. Griffith, the outgoing president was named to the National Board of Directors.

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Ohio Chapter Holds "Kick-Off Dinner"

The Franklin County Chapter of the Ohio SPE got its 1957 Membership Drive off to a roaring start in October with a "Kick-Off Dinner" attended by captains and division leaders.

A delicious roast beef dinner was followed by the business portion of the meeting conducted by Jacque Vail, Membership Committee chairman. Mr. Vail introduced the guest speaker of the evening, William L. Schmidt, president of the Columbus Bar Association and prominent local attorney.

Mr. Schmidt discussed the subject of "Professionalism," particularly drawing a relationship between his profession and that of engineering. He spoke in some detail of the various public relations efforts being conducted as live projects by his organization and in conclusion outlined the similarity between the constitutions drawn up by both the Ohio Bar Association and OSPE.

Executive Secretary Lloyd Chacey briefly discussed the state membership campaign picture, citing particularly the State Membership Workshop held September 28 at Ohio Union. He urged every member present to exert his full effort and zeal in the membership campaign which ended November 1. This appeal was also made by President Ken Cosens.

Scholarship Check

Shown l. to r. are: Mrs. Alfred M. Danzilli of the Scholarship Fund Committee and Mrs. Anthony E. Balionis, retiring president of the Ladies' Auxiliary, Pittsburgh Chapter, PSPE, presenting Robert C. Gorham, P.E., professor of electrical engineering at the University of Pittsburgh, with a $500 check that will help some worthy senior engineering student to realize the experience of graduation.

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. . . NEW LITERATURE . . .

To help the offering firms determine which literature you require, when requesting an item, be sure to list all specifications shown . . . and say you saw it in the AMERICAN ENGINEER.

WELDING—A new 12-page booklet contains information to help welders, welding engineers, chemical construction contractors and metal fabricators obtain a sound root pass weld with the aid of a consumable insert when only one side of the weld is accessible. The booklet, issued by Arcos Corp., Philadelphia, Pa., compares conventional methods of producing a root pass to the use of consumable EB weld inserts. Fifteen different insert compositions are classified for the welding of carbon steels, austenitic stainless steels, non-ferrous alloys and chrome-moly and chrome steels. One section deals with joint design for varying wall thickness. Placement of the EB weld insert for a typical butt weld is diagramed. Extensive treatment is given to root pass welding procedures including tack welding for positioning, gas protection of the inner surface, root pass inspection and completion of the weld. A chart lists recommended filler rods. Also included is data on the dimensions of welded and seamless steel pipe and specifications for austenitic stainless steel pipe of both welded and seamless versions.

—AE—

TRUCK ENGINEERING—A new Truck Engineering Bulletin, illustrating and describing the new bearing extractor attachment, has been published by the Elwell-Parker Electric Company, Cleveland. The attachment performs four basic functions: removal of couplings; removal of bearing chocks; replacement of bearing chocks on reground work rolls; and replacement of couplings. The literature illustrates the attachment and presents a detailed engineering drawing showing complete truck specifications. Major design and operating features are described with considerable information also presented on major truck components. Copies may be obtained from the Elwell-Parker Electric Company, 4205 St. Clair Ave., Cleveland 3, Ohio.

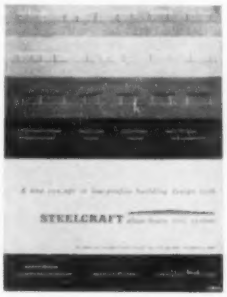
—AE—

FILING EFFICIENCY—Handy guides for measuring filing costs and results along with a detailed plan of action to improve filing efficiency are made available to management in a 28-page manual, "How to Measure Your Filing Costs and Efficiency," published by Remington Rand Division of Sperry Rand Corp., New York, N. Y. Revealing that the average cost of creating the contents of a standard four-drawer file cabinet is nearly $10,000, the manual underlines the importance of determining that full value is received from the filing system. A list of nineteen check points is included to help management uncover the strengths and weaknesses of the filing operation. An easy-to-use reference chart provides at a glance the cost of operating a four-drawer file, depending upon the average salary of file clerks, and the average number of files handled by each clerk. Five simple rules for file economy will help management obtain top efficiency from the filing system.

VERSATILE CONTROLS—Simple all-purpose electrical controls, known as Versatrols and suitable for use with virtually any detectable variable, are described in a 12-page Bulletin issued by Assembly Products, Inc., Chesterland, Ohio. Bulletin 106 explains applications of the most common Versatrol circuits, both automatic and limit, including the new Load Sentry overload control. Like all API controls, Versatrols are built around contact meter-relays of almost infinitely variable sensitivities, operating directly from any electrical signal. Trip points are adjustable and there is continuous signal indication. Bulletin 106 contains complete ordering information.

—AE—

NEW ROOF SYSTEM—A new concept in low profile building design is graphically described by The Steelcraft Manufacturing Company, Cincinnati, Ohio, in their new



Slope Beam Roof System catalog. The eight-page catalog contains unique drawings illustrating various applications of the new roof system, which is ideal for virtually every type of flat roof construction. Typical examples include renderings and labeled details of a school library, clinic and supermarket. Also featured in the catalog are complete slope beam and purlin specifications as well as load capacities tables. According to Steelcraft, this new slope roof system could reduce building costs as much as thirty per cent. For further information and copy of Slope Beam catalog, write to: Nat Lehman, The SteelCraft Manufacturing Company, 9017 Blue Ash Road, Cincinnati 42, Ohio.

—AE—

PRECISION PLATING—A 20-page brochure entitled, "Precision Finishes on Metals" is offered by Anachrome Corporation of South Gate, California which is an affiliate company of Anadite, Inc. Particular emphasis is placed on the "Hardas Process" which has been proven to be the finest method of hard anodizing. The brochure is the first complete illustrated brochure ever offered on the "Hardas Process," the firm claims.

GAS TURBINE—Versatility in application of the combustion gas turbine in the gas transmission, petrochemical, petroleum, chemical, rubber and paper industries is described in General Electric Company's new publication designated GED-3446. Bulletin's information pertains to these modern prime movers which range from 6700- to 30400-hp and from 4750- to 21800-kilowatts in capacity. Data points out the availability of shaft power, exhaust heat and hot air or gas which can be obtained from the combustion gas turbine which also operates on a number of fuels. This four-color, 32-page publication (GED-3546) can be obtained by writing to the General Electric Company, Schenectady 5, N. Y.

—AE—

SUPPLIES—A 48-page catalog on supplies and accessories for gas and arc welding is now available from Air Reduction. Presented in this catalog, which contains over one hundred illustrations, is complete information on ferrous and non-ferrous welding rods for oxyacetylene welding and Heliwelding; welding and brazing fluxes and their applications; aluminum welding fluxes; Aircosil silver brazing alloys; brazing alloys; Jackson and Airco protective equipment including goggles, glare protection spectacles, cap and goggle combinations, welding helmets and face shields, hard hats, headgear and pocket shields; leather welding gloves; Jackson electrode holders and cable connectors; weld cleaning tools; twin and single line hoses; and many other items. For your copy of this new welding supplies and accessories catalog, write Air Reduction Sales Company, a division of Air Reduction Company, Incorporated, 150 East 42nd St., New York 17, N. Y. Specify Form ADC 848B.

—AE—

GRIT COLLECTING—"Grit Collecting and Grit Washing Equipment," Book 2571, is the latest publication presently being distributed by Link-Belt Company. This 28-page book is profusely illustrated, tab indexed, and three-hole punched for permanent retention. Book 2571 contains design data on seven types of grit collectors, two grit washers, and the Tritor screen, which is a combination grit collector and mechanical screen manufactured by Link-Belt Company. Essential equipment is shown for numerous applications. Detail drawings and specifications are included to assist the engineer in the preparation of his drawings and specifications. The designs include velocity controlled chambers for shallow or deep chambers, chambers with dewatering and washing screws or inclined plane dewatering troughs. For your copy of Book 2571, write to the Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Ill., or the nearest Link-Belt District Sales Office.

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STRICTLY BUSINESS

Personalities . . . **Stuart F. Knepp** has been named chairman of the Technical Advisory Board of the **Holmes Gage & Development Corporation,** Columbus, Ohio . . . The **J. O. Ross Engineering Corporation** New York, N. Y., announces the appointment of **Jean F. Gschwind** as vice president of development and research, a new office in the company . . . **Eugene F. Gibbons** has been named district manager of the Philadelphia office of the **Raymond Concrete Pile Company,** New York, N. Y. He suceeds **William A. Cunningham** who has been appointed New Orleans district manager . . . **Walter Kudlaty** has been promoted to chief design engineer for the Miller Fluid Power and Tru-Seal Divisions of the **Flick-Reedy Corporation,** Melrose Park, Ill., it has been announced by **Frank Flick,** president . . . **Charles Villiers,** designer and research engineer, has joined the staff of the Electronics Department of **Hamilton Standard,** a division of **United Aircraft Corporation,** Broad Brook, Conn., as a project engineer . . . The assignment of two new district engineers at Portland, Ore., and Oklahoma City has been announced by **Dr. J. E. Buchanan,** president of **The Asphalt Institute. Cecil D. Miller** has assumed duties at Oklahoma City, while **Carl S. Larson** has been named to the new district engineering office at Portland . . . **Robert J. Beck** has been appointed assistant chief engineer of the Jack Division of **Duff-Norton Company,** Pittsburgh, Pa.

Mr. Knepp

H. A. Mike Flanakin has resigned as highway engineer of the **American Trucking Associations, Inc.,** Washington, D. C., to join the firm of **Charles M. Upham Associates,** consulting engineers. He has been succeeded by **Richard A. Lilli . . . Morley H. Mathewson,** manager of central engineering for **International Minerals & Chemical Corporation,** Chicago, Ill., has been promoted to director of industrial engineering . . . Reorganization of the staff of **Vitro Engineering Company,** a division of **Vitro Corporation of America,** New York, N. Y., has been announced by **Woodman Perine,** division president. **Sidney M. Stoller** has been promoted to engineering manager with complete responsibility for all technical operations of the division. **James C. Tourek** has been promoted to chief project manager . . . **Henry I. Keves** has been named assistant chief engineer at **Diamond Crystal Salt Company,** St. Clair, Mich. The firm also announced that **Ralph J. Puskas** has been appointed design engineer . . . **Edward B. Kirby** has been named director of research for the **New York Trap Rock Corporation,** West Nyack, N. Y. . . . The appointment of **Irving K. Kessler** to the newly-created post of manager, management engineering, Defense Electronics Products, **Radio Corporation of America,** New York, N. Y., has been announced.

Mr. Stoller

Kenneth L. Madden is the new plant manager at **Electronic Welding,** Burbank, Calif., according to an announcement from **Ray Koepenick, president . . . American Electronics, Inc.,** Los Angeles, Calif., announces the appointment of **E. F. Echolds** as chief engineer of the firm's Electro-Mechanical Division . . . **Oscar V. Sprague,** superintendent of the utilities division at the Kodak Park Works plant of **Eastman Kodak Company,** Rochester, N. Y., retired January 1. His successor in the post is **Harold A. Decker . . . Kaiser Engineers,** Oakland, Calif., announces the appointment of **David F. Shaw** as vice president . . . **Bernard L. Goldwasser** has been named supervisor of process engineering in the printed circuit department of **Packard-Bell Electronics Corporation,** Los Angeles, Calif. . . . **E. D. Zimmer** has joined the staff of **Control Data Corporation,** Minneapolis, Minn., as a senior engineer, **Frank C. Mullaney,** director of engineering, has announced . . . **Graflex, Inc.,** has announced the appointment of **Barry Passman** as director of engineering. He will be in charge of the engineering and development program . . . The appointment of **Thomas E. Long** as assistant to the vice president for promotion of the **Portland Cement Association** has been announced . . . **C. D. Ramsden** has been named president and general manager of the **Pacific Coast Engineering Company,** Alameda, Calif., according to an announcement by the board of directors of the firm . . . **Gerald M. Henriksen** has been appointed director of engineering for **Acoustica Associates, Inc.,** Mineola, L. I.

Mr. Decker

New Partner . . . **Plumb, Tuckett and Pikarsky,** Consulting Engineers-Architects, have announced that **A. N. Laird** will become a partner in the firm, effective January 1. He will be in charge of the firm's new office in Detroit, Mich.

Expansion . . . **Eberhard Faber Pencil Company** has moved into a new multi-million dollar plant at Crestwood, Wilkes-Barre, Pa., after 108 years in New York City. The one-level plant, which occupies seven acres of a 38-acre site, has extensive design and research laboratories . . . Following the recent expansion of its engineering and administrative offices in New York City, the **Loma Machine Manufacturing Company** has now begun construction of a $500,000 addition to its manufacturing plant at Alburtis, Pa.

New Firm . . . Formation of **Chempro, Inc.,** a Pennsylvania chartered corporation, is announced by **Dr. J. A. Patterson** and **Carl Labovitz,** engineers and associate executives in the firm.

SUBJECT LISTING OF NSPE PUBLICATIONS

(Unless otherwise indicated publications listed below are FREE and may be obtained by writing to the National Society of Professional Engineers, 2029 K Street, N.W., Washington 6, D. C.)

CHAPTER ACTIVITIES

Monographs outlining various chapter functions have been prepared for the use of chapters: **Helping the Young Engineer, Ladies Auxiliaries, Promote Ethical Practice, Chapter Publications, Functional Group Activities, Meetings, Fellowship, Attendance, Public Relations, Education—Key to the Future, Chapter Evaluation and Scoring System, and Indoctrination Conference for Chapter Officers and Committees.**

Welcome Mr. President—An informative booklet outlining organizational functions and suggestions for chapter presidents.

COMMUNICATIONS

***How to Improve Engineering-Management Communications** — Executive Research Survey Number One. Based on a survey of more than 300 companies employing engineers, this report contains information on engineering-management relations with respect to the lines of communication between engineers and management. Price $1.00 Members. $2.00 Non-members.

COMPETITIVE BIDDING

About Competitive Bidding—Reprint from American Engineer (NSPE Believes).

Competitive Bidding for Professional Services — NSPE Professional Policy Statement.

Recommended Procedure for Negotiating Engineering Contracts—NSPE Professional Policy Statement.

CONSULTING ENGINEERS

So You Want To Open a Consulting Office—Series of articles dealing with problems faced in opening a consulting office: **By Way of Qualifications**—John B. McGaughy, P. E., **Operating Your Practice**—Alfred J. Ryan, P. E., **Ethical Problems**—Francis S. Friel, P. E., Reprints from American Engineer. 20c each article—3 for 50c.

CORPORATE ENGINEERING PRACTICE

Corporate Professional Practice vs. Individual Professional Practice — The Special Committee on Registration Law, NYSSPE. Reprint from American Engineer.

Should Corporations Practice Engineering?—Ronald B. Smith, P. E. and V. George Terenzio, P. E. Reprint from American Engineer. A discussion of the pros and cons of the issues involved in the debate over corporate practice of engineering.

CREED

Engineers' Creed—Suitable for distribution—free; for framing—50¢ each.

EMPLOYMENT PRACTICES

Criteria for Professional Employment of Engineers — Adopted by NSPE, June 1956. 25¢ each.

Engineering Employment Practices Newsletter—Published monthly by NSPE; available to members upon request.

Survey Report—Engineers Employed by Private Practitioners.—Covers salaries, hours, fringe benefits, etc., of engineers employed by consultants. Price $1.00—50¢ members.

ETHICS

Canons of Ethics—Suitable for distribution—free; for framing—50¢ each.

Ethics for Engineers—Canons of Ethics, Creed, and Rules of Professional Conduct.

FEE SCHEDULES

Recommended Grades, Duties, Responsibilities and Qualifications for Pre-Professional and Professional Positions—Adopted by NSPE, June, 1952.

Report on Fee Schedules—Revised October, 1956. A study of the Salary and Fee Schedule Committee of NSPE bringing together various schedules of fees and related practices of engineers in the consulting field.

FUTURE OF ENGINEERS

Engineers for the Future—Reprint from American Engineer (NSPE Believes).

If I Were a Young Engineer Today—Reprint from American Engineer.

GOVERNMENT

Engineers in Federal Government—Reprint from American Engineer (NSPE Believes).

Our Function in Governmental Liaison—Reprint from American Engineer (NSPE Believes).

INDUSTRIAL RELATIONS

A Professional Look at the Engineer in Industry — NSPE Engineer-in-Industry Committee. A major publication of vital importance delving into all phases of the professional and economic status of that group which comprises the largest number of engineers in any functional field. Price $1.50 (members).

Professionalism or Unionism—Facing the Issue—Past President T. Carr Forrest, Jr., P. E. A discourse on the aspects of unionism for the professional. Reprint from American Engineer.

The Professional Engineer in Industry—Reprint from American Engineer. (NSPE Believes).

The Professional Union—A Contradiction—Past President Clarence T. Shoch, P. E. A discussion of the development of engineers' unions and the reasons why unionism is incompatible with professionalism.

Citeria for Professional Employment of Engineers — Adopted by NSPE, June, 1956. 25¢ each.

Engineering Employment Practices Newsletter—Published monthly by NSPE; available to members upon request.

Engineering Team (The)—Reprint from American Engineer (NSPE Believes).

Professional Responsibility vs. Collective Bargaining—NSPE Professional Policy Statement.

***Career Satisfaction of Professional Engineers In Industry**—Latest in a series of Executive Research Reports on employment and professional problems concerning engineers in industry. Price $1.50 Members. $3.00 Non-members.

LEGISLATION

Legislative Bulletin—Published monthly by NSPE; available to members upon request.

MANPOWER

***How to Attract and Hold Engineering Talent** — Executive Research Survey Number Three. This report reflects the experience of more than 200 companies which employ engineers and attitudes of 1,400 individual engineers who are employed in industry. Price $1.00 Members. $2.00 Non-members.

***How to Improve the Utilization of Engineering Manpower**—Executive Research Survey Number Two. This report pools the experience of more than 495 companies employing engineers on the subject of utilization of manpower. Price $1.00 Members. $2.00 Non-members.

MEMBERSHIP PROMOTION

Every Man a Debtor—Sixteen-page booklet explaining NSPE organization, programs, activities and objectives.

Membership Kit—This kit is available to membership chairmen and contains a general outline of membership campaign techniques and sample materials. Any of the publications listed in this outline are generally available for distribution to membership promoters as membership mailing pieces.

NSPE PHILOSOPHY

Engineering Societies of America—Paul H. Robbins, P. E., executive director, NSPE. Describes organization, programs, activities and objectives of NSPE. Reprinted from G-E Review.

Is Our Registration Requirement Limiting Membership?—Reprint from American Engineer (NSPE Believes).

Why a Professional Society? — Reprint from American Engineer (NSPE Believes).

NATIONAL SECURITY

Engineering Profession in National Security (The) — NSPE Professional Policy Statement.

ORGANIZATION

Model Constitution for Ladies Auxiliary Chapters.

Model State Society Constitution.

NSPE's Constitution and Bylaws.

POLICIES, NSPE

Professional Policies—Compilation of all present NSPE policies as adopted by the Board of Directors.

Administrative Policies — Compilation of all present NSPE administrative policies. Includes Constitution and Bylaws, with a common subject index.

PROFESSIONAL DEVELOPMENT

Professional Development—The Responsibility of Industry and the Engineer—Conference Proceedings of 1955 meeting devoted to a discussion of the engineer in industry. (Price $1.00 members).

Professionalism in Industry: The Dow Story—Case history of professionalism in industry. Reprint from American Engineer.

PROFESSIONAL DEVELOPMENT

Conference Proceedings, Atlantic City, 1956 — Management-Professional Employee Relations, Professional Status of Engineers in Government Employment, Teaching Professional Concepts in our Engineering Schools, 10¢ each.

Du Pont's Engineering Department Takes a Forward Look at Professional Development — C. H. Evans, P. E. Reprint from American Engineer.

PROFESSIONALISM

How a Professional Attitude Can Be Instilled in Engineers—Dean W. R. Woolrich, P. E. Reprint from American Engineer.

Some Thoughts on Engineers and the Engineering Profession — Speech by Harry A. Winnie, P. E., vice president, General Electric Co. (Retired), presented at the 20th Annual Meeting of NSPE.

Significance of the PE Emblem.

PUBLIC RELATIONS

Engineers' Week—Reprint from American Engineer (NSPE Believes).

Our Public Relations Responsibilities—Reprint from American Engineer (NSPE Believes).

There's Nothing Wrong With Engineers—Reprint from American Engineer.

REGISTRATION

A Model Law for the Registration of Professional Engineers and Land Surveyors.

Is Our Registration Requirement Limiting Membership?—Reprint from American Engineer (NSPE Believes).

Next Step Registration — Informative pamphlet for engineering students and others on values and procedure for engineering registration.

Registration: Then, Now and Tomorrow—Frank H. Prouty, P. E., chairman, National Bureau of Engineering Registration. Reprint from American Engineer.

Professional Engineering Registration Laws—A compendium compiled by Alfred L. McCawley in cooperation with NSPE. Available from A. L. McCawley, Box 474, Jefferson City, Missouri—$8.75.

SALARY SURVEY

Professional Engineers' Income and Salary Survey — 1952-1954-1956 statistics covering NSPE members—50¢ each (members). $1.00 Non-members.

STANDARD FORM OF AGREEMENT

Standard Form of Agreement Between Owner and Engineer for Professional Services—Price—5¢ each.

TRAINING

***How to Train Engineers in Industry**—Executive Research Survey Number Four. This report reflects the experience of more than 200 companies which employ engineers as well as of many individual leaders in the training field. Price $1.00 Members. $2.00 Non-members.

UNITY

Unity for Professional Action — Reprint from American Engineer (NSPE Believes).

Professional Organization of Engineers—Reprint from American Engineer.

VOCATIONAL GUIDANCE

Do We Have Enough Engineers? Reprint from American Engineer (NSPE Believes).

Engineering . . . A Career of Opportunity—A general vocational guidance pamphlet.

Engineers for the Future—Reprint from American Engineer (NSPE Believes).

List of Accredited Engineering Schools—Reprint from ECPD Annual Report.

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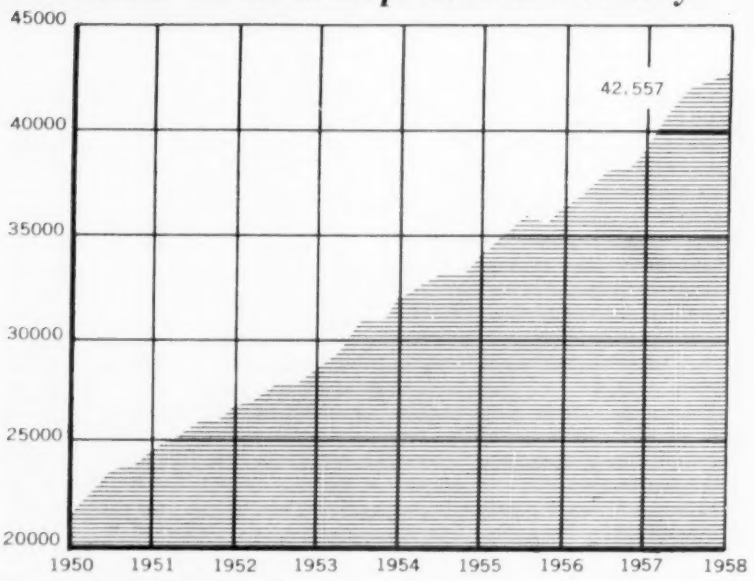

Engineers' Week

(*Continued from page 26*)

Sporn, David B. Steinman, Bertram D. Tallamy, Charles Allen Thomas, and Robert E. Wilson. The chairman of the Week is John L. Bahr, P.E., chief engineer, National Vulcanized Fibre Co., Wilmington, Delaware.

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Adache Associates, Inc. 38
Albright & Friel, Inc. 39
Alexander Hamilton Institute 5
Ammann & Whitney 37
Andrews and Clark 37
Michael Baker, Jr., Inc. 39
Harry Balke Engineers 38
Elmer S. Barrett Associates 38
E. D. Barstow & Associates 38
Biltmore Hotel 4
Black & Veatch 37
Borden Metal Products Co. 10
George W. Brandt, Engineer 38
Brockway, Weber & Brockway, Inc. .. 36
Bucknell Engineering Co. 39
Builders Estimating Service, Inc. 40
Burns & McDonnell 37
Burns & Roe, Inc. 37
Henry J. Campbell, Jr. 38
Capitol Engineering Corporation 39
Homer L. Chastain & Associates 36
Chas. W. Cole & Son 36
Commonwealth Associates, Inc. 36
Consoer, Townsend and Associates 36
Crescent Engineering Company, Inc. .. 36
De Leuw Cather & Company 36
Thomas E. Duce Associates 40
Ellmann Engineering Co., Inc. 40
Engineers Testing Laboratory, Inc. .. 40
Eustis Engineering Company 36
Eugene K. Falls 36
Fay, Spofford & Thorndike 36
Ferguson-Gates Engineering Company 40
Forrest and Cotton 40
Foster & Cafarelli 38
Frazier-Simplex, Inc. 39
Freese & Nichols 40
Gannett, Fleming, Corddry & Carpenter, Inc. 39
Giles Drilling Corporation 40
Gustave M. Goldsmith 38
Green Engineering Co. 39
Greenwick Book Publishers 8
Hall Laboratories, Inc. 40
Hardesty & Hanover 38
Frank E. Harley & Associates 37
Frederic R. Harris, Inc. 38
Harris, Henry & Potter, Inc. 40
Philip J. Healey, Inc. 40
The Hinchman Corporation 37
Howard Needles, Tammer & Bergendoff 38
Industrial Ovens, Inc. 38
Institute of Scientific Studies 7
H. M. Ives & Sons, Inc. 6
Jones, Henry & Williams 38
Kaiser Engineers 36
Kennedy-Riegger Drilling Co., Inc. .. 40
A. C. Kirkwood & Associates 37
Elmer A. Kish 38
Kuljian Corporation 40
D. C. Latella & Associates 40
Law-Barrow-Agee Laboratories, Inc. .. 36
Lawrie & Green & Associates 40
Litchfield Engineering Service 36
Lockwood, Andrews & Newnam 40
Madigan-Hyland 38
George Stanley Marshall Associates .. 38
Frank D. McEnteer 40
Metcalf & Eddy 36
Merritt & Welker 36
Modjeski and Masters 40
Moran, Proctor, Mueser & Rutledge .. 38
Niagara Blower Co. 9
The C. W. Nofsinger Co. 38
James P. O'Donnell 38
Oklahoma Testing Laboratories 39
John Ostborg 39
Palmer & Baker Engineers, Inc. 36
Parsons, Brinckerhoff, Hall & MacDonald 38
V. C. Patterson & Associates 40
Pennsylvania Drilling Co. 40
Photronix, Inc. 40
Pioneer Engineering Service Co. 39
Pittsburgh Testing Laboratory 40
Plumb, Tuckett & Pikarsky 36
Praeger-Kavanagh 38
Pressure Concrete Co. 40
Prestressing Research & Development, Inc. 40
Revolvator Co. 6
Cyrus Wm. Rice & Co., Inc. 40
Robert and Company Associates 36
Robert Edw. Robinson Associates 36
Russell and Axon 37
Sargent & Lundy 36
Seelye Stevenson Value & Knecht 38
Singstad & Baillie 38
Halwyn Smith 36
Soil Testing Services, Inc. 36
South Florida Test Service 36
Sprague & Henwood, Inc. 40
Stanley Engineering Company 36
D. B. Steinman 38
Sverdrup & Parcel, Inc. 37
Syska & Hennessy, Inc. 38
Tippetts-Abbett-McCarthy-Stratton ... 38
Toledo Testing Laboratory 39
Emerson Venable 40
Vogt, Ivers, Seaman & Associates 39
Water Service Laboratories, Inc. 38
Whitman, Requardt and Associates ... 36
Wilson & Company 36
Wight & Co. 36
Wolverine Engineering 37

Courts

(*Continued from page 29*)

Supreme Court at which time NSPE filed a supporting "friend of the court" brief. The Supreme Court, however, declined without opinion to review the decision, and thus let stand the opinion of the Eighth Circuit Court.

The next court case involving a consulting engineering firm and the Wage-Hour Law arose in 1957 when the Government brought an action against the Norfolk-Washington, D. C., firm of Lublin, McGaughy & Associates. Following the logic and reasoning in the *Turpin* decision, notwithstanding the Eighth Circuit's ruling in the *Brown* case, the Federal District Court in Norfolk dismissed the complaint. The District Court held that certain fieldmen, draftsmen and stenographers were neither engaged in interstate commerce nor in the production of goods for interstate commerce within the meaning of the Wage-Hour Act, and thus were exempt from the overtime and minimum wage provisions of the Law. The District Court decision was recently affirmed after the Government had appealed to the Fourth Circuit Court of Appeals.

With the present conflict between the Fourth and Eighth Circuits on the applicability of the Wage-Hour Law to professional consulting engineering services, the chances for a Supreme Court ruling on this point have been greatly increased, should the Government decide to appeal the Fourth Circuit decision. This is so because one of the primary considerations favoring Supreme Court review of a case is a situation in which a court of appeals has rendered a decision in conflict with the decision of another court of appeals on the same matter. Should the *Lublin, McGaughy* case be appealed, the National Society may again file a "friend of the court" brief in support of the consultant's position.

A vital point which consulting engineers should consider carefully are the implications in both the *Brown* decision of the Eighth Circuit and the recently-decided *Lublin, McGaughy* case with respect to the engineer furnishing consulting services at the actual site of construction. The Eighth Circuit, in holding consulting engineering services covered by the Act because they amounted to an engagement in commerce, placed heavy emphasis and weight upon the fact that the firm provided a "resident engineer" at the project site. The duties of the "resident engineer" were to inspect incoming materials, inspect the work completed by the contractor to see that it conformed to the plans and specifications and to make progress reports to the owner. The "resident engineer" performed no work on the project itself and had, under the agreement, no right or duty to direct or control the contractor in his work. In commenting upon this arrangement, the Court concluded that "The inference is fairly deducible that the work of the 'resident engineer' was a vital factor affecting the progress of the construction project," and that "the fact remains that completion of a project depends in no small way upon the services rendered by defendant's employees."

The Fourth Circuit, even though deciding that the employees of the consulting engineer were not subject to the provisions of the Act, recognized that a different situation might exist if the consultant furnished active services at the site of construction. The Court commented that some employees of the firm may have participated so actively at the site of construction as to be covered; "and nothing in this decision is intended to preclude further proceedings as to them."

The observations of both appeals courts on this point indicated that the furnishing of resident engineering services at the actual project site may increase the possibility that coverage will result, since such activities may well be considered to be "directly related" to interstate commerce.

In addition to a Supreme Court ruling, an amendment to the Wage-Hour Act could clarify the situation by expressly exempting from coverage the rendition of professional services. In this connection, NSPE has appeared before both the House and Senate Labor Committees which had before them proposed amendments to the Wage-Hour Act. In its testimony, the Society brought out the fact that the present status of the law in regard to coverage of consulting engineering firms is in a state of considerable confusion as a result of conflicting court interpretations. In the absence of a Supreme Court decision, the Society suggested that this situation could best be corrected by Congressional action through amendment to the Act. The Society recommended two amendments which would accomplish the desired result. One would expressly exclude from the definition of "goods" any plans, drawings or specifications or other written material prepared in connection with the performance of professional services. The other would provide that "an employee shall not be deemed to have been employed in any closely related process or occupation directly essential to the production of goods by reason of any work arising out of the performance of professional services by his employer." The effect of the addition of this language to the requirements for coverage would be to expressly exclude from coverage the rendition of any professional services.

In addition to the cases already litigated, it is understood that the Department of Labor has investigated other consulting engineering firms throughout the country. The Government's most recent action has been the filing of a complaint against the firm of Singstad & Baillie for violation of the Act in connection with engineering work performed on the Baltimore Harbor tunnel. This case has drawn the opposition of the Maryland State Roads Commission on the ground that should the Department of Labor be successful in its action against Singstad & Baillie and against other consulting engineers in the future, the result would cause a substantial increase in the cost of all highway construction in every state. In a statement issued by the Special Assistant Attorney General it was said that "If the Department of Labor is successful in this suit, it is the feeling of attorneys for Singstad & Baillie, the State Roads Commission of Maryland, the Attorney General of Maryland and others in an official capacity in Maryland, that the Federal Government will have gone a long way towards its apparent ultimate goal in holding Consulting Engineers, engaged in any highway capacity, subject to the Fair Labor Standards Act."

It would appear that the outcome of the Singstad & Baillie suit could be controlled by the *Lublin, McGaughy* decision of the Fourth Circuit Court of Appeals which held that consulting engineers are not subject to the provisions of the Act, inasmuch as Maryland is within the jurisdiction of the Fourth Circuit. A final conclusion, however, will, of course, be up to the courts.

These developments lend credibility to the thought that the Department of Labor is engaged in a campaign to subject consulting engineering services to the provisions of the Wage-Hour Act. In the absence of congressional amendments or a Supreme Court ruling, the question of whether or not the Act is applicable to consulting engineers will have to be decided on a court by court basis, with the outcome depending to a large extent upon the location of the firm and the particular court's opinion of prior rulings on this point.—***End.***

Etkes

(*Continued from page 13*)

have only one or two major projects a year, a "spot" or "one-shot" arrangement at a flat fee would be best.

In the year-round operation, your public relations representatives will turn out a steady stream of material on your organization, its projects and personnel to all media. During the course of a year, the firm can develop a good working publicity program for you.

THE "spot" operation normally covers only one project. Generally, the material on the project is prepared and then distributed at a press conference or cocktail party, a tour, or trip to the site of the project. This is preceded by intensive editorial contact by your public relations representative, arrangements for photographs and planning for radio and television, if such coverage is appropriate. It is followed by further editorial contact. The "one-shot" operation is a big push, and it can produce results.

The cost of a publicity program can be geared to the size of many engineering firms' budgets. Few engineers need or can afford a multi-thousand dollar program such as many of the larger public relations firms specialize in.

The small, reputable public relations firm has a number of advantages for the engineer seeking national recognition. The small firm is interested in developing a program for the low-budget client. It has unusual flexibility to operate at all levels, from the minor to the major media. It does not have to concentrate its efforts only on the big, mass circulation media.

Even if you can't afford to retain a public relations firm now, you should try to develop your own community public relations program. The basis for such a program is neighborliness. Other professions, the doctor, lawyer, dentist, come into contact with the public every day. The engineer is limited in the number of people he meets in his work and this restricts the number of people who can become familiar with him and his services.

Everyone else involved in a construction job has the opportunity to become known to the public through their advertising efforts. The name of the builder and contractor are on the trucks and equipment, billboards, building shacks, fences and in newspaper advertisements. The plumbers, electricians, masons and other trades tack up signs calling attention to their efforts. The engineer, at the most, gets a modest mention at the bottom of the billboard or newspaper advertisement.

If the engineer is not better known in the community, it is his own fault. The engineer is a professional man, but he is also in business. In today's competitive business world he is selling his professional counsel and services. It is important that the public know the essential part he plays in the successful completion of a project. This recognition can eventually mean more commissions, more business, more prestige.

A community public relations program is started by being a good neighbor. To do this you must meet and serve more people. Join community organizations and service clubs, volunteer your services on committees, offer to speak on your specialization before community groups.

These are all proper means of making your services better known to the public. Use them. The important thing to do is get a publicity program started, remember it every day and keep it going.

You'll not only benefit yourself, but by spreading understanding of the engineer's work, you'll be doing the entire engineering profession a service.—***End.***

Ladies Program
NSPE Spring Meeting

Thursday, February 13

9:00 a.m. Coffee Hour
10:30 a.m. Shopping Tours
12:30 p.m. Lunch with Husbands (on your own)
2:00 p.m. Tours to State Capitol and Downtown Lansing
6:00 p.m. Dinner with Men—Big Ten Room
8:00 p.m. Get Together—South Suite at Kellogg Center

Friday, February 14

9:00 a.m. Coffee Hour
10:30 a.m. M.S.U. Campus Tour
Stops at Food Service Building
Alumni Memorial Chapel
12:30 p.m. Ladies Luncheon—M.S.U. Union Bldg.
Program, "Herbs & Cooking"
Mrs. Carl Collin
4:30 p.m. Social Hour with Men
Walnut Hills Country Club
6:30 p.m. Banquet—Big Ten Room

Saturday, February 15

9:00 a.m. Coffee Hour
10:30 a.m. Shopping Tours

All meetings in Kellogg Center unless otherwise noted.

Vogt

(*Continued from page 30*)

by the executive committee of the Functional Section on Engineers in Private Practice under the chairmanship of A. C. Kirkwood, P.E., of Kansas City, Missouri. Under authority granted by the NSPE Board of Directors, the Functional Section has turned $2,000 of this sum over to ATA; the balance to be used at a later date to further the passage of the Jenkins-Keogh legislation.

The American Thrift Assembly has operated entirely on the basis of voluntary contributions from organizations and individuals. Those persons who stand to benefit from the Jenkins-Keogh legislation and who have not yet contributed may still offer their assistance in this endeavor. Contributions should be mailed to the "NSPE Consulting Engineers' Fund," 2029 K Street, N. W., Washington 6, D. C.—***End.***

About the Author . . .

Mr. Vogt.

Robert C. Vogt was graduated from the College of Engineering at the University of Michigan. For the past ten years he has been with the firm of Vogt, Ivers, Seaman and Associates, Cincinnati, Ohio. Prior to his present position, Mr. Vogt had a varied work background, which included seven years with Holland Ackerman and Holland; one year at the University of Chicago; sixteen years with the Corps of Engineers, United States Army; one year at Eastport, Me., as assistant to engineer in charge of plans and specifications for dams and locks; two years at Boston, Mass., in charge of the Flood Control Division, and seven years at Cincinnati as chief of the Engineering Division on Flood Control, Navigation, and Military projects.

Mr. Vogt, a member of the Ohio SPE and the ASCE, is the representative of the National Society on both the Board of Directors and the Executive Committee of the American Thrift Assembly.

Spangler

(*Continued from page* 14)

tribute to the increase of scientific knowledge. In the general case this is the exact task of the university and hence scientific brainpower cannot be considered as being wasted in performing it. Perhaps for the good of the nation there should be better and more effective ways of ensuring the placing of information thus obtained in the hands of the applied researcher and the developer who must make the practical application of these discovered principles. I most certainly do not believe that a method now sometimes used whereby we contract directly with a university for operational research, applied research, and development in a whole field of effort makes much sense from the standpoint of making research techniques and discoveries generally available. Such a procedure often results in another undesirable product, i.e., the diversion of research talent to design and development in competition with those engineers who are better trained and more experienced in the practical aspects of building hardware.

The commercial laboratory can provide justification for a certain amount of basic and applied research if this research results either in salable ideas or the advancement of the art. The development of the transistor, for example, pays the moral freight for many years of the many sided research problems which did not come to fruition in the Bell Laboratories and that, of course, is only one of their many discoveries. Their developments, on the other hand, tend to have a built-in control in the sense that it may be extremely difficult to explain to a board of directors why a great deal of money should be spent to enhance the company's reputation but not its revenues. A lot of most useful research can be done at little cost in manpower or money but development usually requires a great deal of both. Many such laboratories do a great deal of excellent applied research and development for the government when the desired projects are appropriate to the work of the laboratory.

In these days a large proportion of the nation's funds and facilities are used in research and development for the military services. It is important therefore to consider their situation. The military services and their laboratories are extraordinarily handicapped in their research and development, and even in their development goals, by the fact that a great deal of theirs is done in a goldfish bowl. Almost every member of the upper government hierarchy considers himself adequately learned in the needs of modern warfare to direct what shall be developed in the way of arms, weapons, and weapons systems. As a consequence it sometimes appears that military research and development is more frequently dictated by the idea that what is prescribed must be worth a banner headline in the newspapers than by what would be most effective in battle against the enemy.

HABITUALLY, hints of new developments and of new weapons inevitably get into the daily press, and because the services, in order to sell their programs, have had to make the most optimistic presentations of their new devices, an opinion grows that the fully developed article will be ready next week instead of 1965. When it does not appear next week, there is immediate insistence that all possible urgency and priority be put on the program and that another czar be added to the evergrowing hierarchy of such overseers. Thus, the number of people whose mission is to look over shoulders is swelled at the expense of those who should be doing feet on the desk research or pencil in hand development.

It should be quite obvious that we cannot do all things at the same highest priority and any attempt to do so can only result in spreading our available scientific talent so thin that nothing has proper priority and our real or apparent shortage of scientific talent is greatly exaggerated.

An another factor which might indicate that the current shortage of scientific talent is more apparent than real we might consider what has happened to the industry with which I am most familiar, i.e., aeronautics, in the past fifteen years. The progress in aviation over that period has been astronomically greater in scope than at any other period in this young science's history. In fact, we are accustomed to speak of progress no longer in terms of continued orderly development but rather use that popularized term, "break through," in describing our advances. I feel it would be far more accurate to describe this progress by saying that actually we have been able to verify some of the extrapolations we have made from time to time, since no assumed nor verified natural law has yet been repealed.

However, the advancement of the state of the art has been no less real for all of that. In achieving this progress we have been urged not only by the public hue and cry I have previously mentioned, and the large sums of money which have become available for research and development through these means, but also by the vital necessity of staying ahead technically in a real war whether cold or hot. As a result of these urges we have conducted most of our programs at high priority, which means by the use of substantially unlimited manpower. As we are all well aware, when one hires the personnel to finish a five year program in three years, he thereby establishes an organization which is twice the size it needs to be for developments at routine priority. Unfortunately, such an animal becomes insatiable by normal means, and, being essentially a kindhearted race, we tend rather to hunt for more food to satisfy its hunger than to feed it a reducing, or even starvation diet.

To continue this simile, when hungry, its roars become so demanding as to frequently lead to insistence on the part of well-meaning tax payers that we continue to support it in the style to which it has become accustomed. The results, naturally, is that we tend to have ten watch dogs where five might have been adequate; and with not enough to occupy their time, they quarrel with each other rather than guard the gates. I am just as convinced as anyone that it is only by competition that maximum results can be achieved in applied research, development or production. However, the amount of this competition must be regulated by common sense, justifiable expenditures, and most important of all by consideration of available talent and the over-all job to be done.

In my own organization I have established the requirement that each laboratory and technical department shall once a year back off and look at what it has accomplished and where it is going. At this time it writes its annual accomplishment summary and revises and extends its ten year plan in the light of what it has done or not done, what new paths are open by virtue of late discoveries, and what be discontinued, continued at relatively low priority, or have added emphasis. I hope by this means to ensure that we will in fact take first things first and employ our limited scientific talent to the prosecution of the most promising projects.

It is my firm belief that in the fields of scientific achievement susceptible to analysis and proof without going to war that we are not inferior to anyone. It appears entirely reasonable to assume we are not behind in weapons or weapons systems either. Let us hope we shall never have to test the validity of this assumption.—***End.***

Maryland Society Presents Course

The Maryland SPE recently presented a course for engineers entitled, "Acquired Professional Concepts in Engineering," which was designed to help the individual develop himself to the fullest extent as an informed member of the profession. Approximately 100 practicing engineers attended the sessions which began October 10 and ended November 21.

The Education Committee of the Maryland Society and the Engineers-in-Industry Committee of the Baltimore Chapter worked together on the project. Certificates were awarded to those completing the course held at Baltimore Polytechnic Institute.

Utilizing the experience of engineers in the area the following subjects were covered in the night sessions: "The History of Engineering as a Profession," by A. G. Christie, professor emeritus, Johns Hopkins University, and past chairman, Maryland Board of Engineering Registration; "Engineering Ethics," by Paul H. Robbins, NSPE executive director; "Engineering Legislation," by Milton F. Lunch, NSPE legislative counsel; "Engineering Registration," by L. G. Smith, superintendent of electrical distribution, Baltimore G. & E. Co., and Maryland SPE past president; "Employment Practices," a panel discussion moderated by C. P. Smith, an associate of J. E. Greiner Company, and Ohio SPE past president; "Professional Activities," a panel discussion with the Baltimore Engineers-in-Industry Committee in charge.

Wayne E. Ault, chairman of NSPE's Engineers-in-Industry Subcommittee, recently issued a memorandum to state and chapter presidents informing them of this program and urging formulation and sponsorship of a similar course in their respective areas as a "significant contribution to the further development of the engineering profession."

JANUARY MEETINGS Of Note

American Society of Heating and Air-Conditioning Engineers—Annual Meeting, January 27-29, Penn-Sheraton Hotel, Pittsburgh, Pennsylvania.

Plaint Maintenance and Engineering Show—Held in conjunction with annual Plant Maintenance and Engineering Conference, January 27-30, International Amphitheatre, Chicago, Illinois.

American Society for Engineering Education—1958 College-Industry Conference on "New Concepts in the Education and Development of Technical Manpower," January 30-31, University of Michigan, Ann Arbor, Michigan.

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What's New

This column describes new products of general interest to professional engineers. For further information, circle the item number on opposite page and mail to the AMERICAN ENGINEER.

These listings are informational and are not an endorsement of the products, nor of the manufacturer's claims.

PLASTIC WINDOW — Item 30

An easy-to-install metal and plastic window that requires almost no maintenance has been developed. Pre-assembled with panes of shatterproof Resolite translucent Fiberglas-reinforced plastic in aluminum or steel frames, and in pivoted or projected units, the lightweight windows pass almost as much light as clear glass—a soft, diffused light that eliminates glare and reduces workers' eyestrain.

PREFAB ASPHALT LINER — Item 31

"Aqualiner," a prefabricated asphalt liner, is designed for heavy duty service in the positive containment of water, brines, sludges, wastes or sewage. Typical installations include reservoirs, municipal water supply systems, irrigation canals, industrial services and military installations. The scope of applications is, however, limited only by the imagination according to the manufacturer. "Aqualiner" is available in two thicknesses, ½" and ¼", in 4' widths. It is factory cut as required by the job.

PORTABLE PLASTIC BOARD — Item 32

A portable plastic drawing board, molded of high impact polystyrene and weighing less than eight ounces has been developed. Comes complete with two transparent plastic triangles, one each 30°/60° and 45°. Two retractable metal straight edges eliminate the need for a T-square. Four recessed spring clips hold standard 8½" x 11" sheet of paper, without thumbtacks or scotch tape.

STABILIZATION AGENT — Item 33

An oil field chemical that prevents gyp deposition in primary and water-flood production wells has been developed by Calgon Company. The new pellet-form stabilizing agent is a controlled solubility phosphate. It is specially formulated to prevent mineral deposition in the well bore, in flow channels adjacent to the well bore, and on downhole equipment such as pumps, rods, and screens. According to Calgon, the product works on a stabilization principle entirely unrelated to that of conventional sequestration.

COUNTER HEIGHT CABINETS — Item 34

Counter height equipment cabinets have been designed by Elgin Metalformers Corporation for research, production control, and instrumentation activities where operators are required to be on the move or standing. The units were engineered to improve operator efficiency and reduce fatigue in operations requiring technicians and engineers to move from point to point as they take readings and operate controls.

DISTANCE MEASURING DEVICE — Item 35

Accurate measurements can now be taken conveniently from a moving vehicle with the Rolatape Model #400 extended handle measuring wheel. The 30 inch long handle enables the driver to guide the measuring wheel with ease while operating the car at a moderate speed. This feature is especially useful for taking long distance measurements, where measuring on foot is impractical or inconvenient.

"VARIABLE-AREA" DIAPHRAGM — Item 36

Designers of aircraft and industrial equipment, as well as instrument and control engineers, will be interested to know about the "Variable-Area" diaphragm. With it, where varying supply pressure is involved in control applications, they can now effect important design, production and performance improvements in weight, size, speed and cost, the manufacturer claims. Its use eliminates the need for pressure regulators in many cases. It is compact enough to install in a small valve motor.

SIEVE SHAKER — Item 37

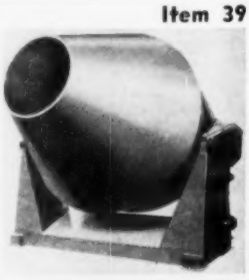
A new pattern in shaking action has been built into a Sieve Shaker manufactured by Soiltest, Inc. It gives the same complete sieving of all types of materials that were formerly separated on only larger, heavier and more costly shakers. The Shaker can be used for all types of field, laboratory and production sieving or grading operations on materials.

TINY VALVE — Item 38

A high pressure valve, so tiny it can fit inside a tennis ball has been developed. With a body slightly larger than an ordinary postage stamp, this tiny valve is designed for 1/16" tubing and to handle up to 15,000 psi. The stem is non-rotating that never turns and always seats securely. Available in stainless steel, Monel or Hastalloy and is adaptable for standard compression, socket weld and I P S connections. The capacity of the system, with a minimum of hold-up is satisfactory for gauge lines, instrument, sampling and catalytic injection systems.

LIGHTWEIGHT MIXERS — Item 39

Simplified design, a weight that is equal to about half that of comparable mixers and low price are three features of a new line of Koehring-Johnson spindle type tilting mixers, according to the manufacturer, C. S. Johnson Co. The new mixers will be built in 2, 4, 6 and 7½ cubic yard sizes. A 50 degree tilting angle ensures the complete discharge of a full batch in 10 to 12 seconds.



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JANUARY

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31	32	33	34	35	36	37	38	39	40

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The question came up at a Heads-of-Departments meeting. Production told Personnel that his new typist asked that a portion of her salary be set aside for U. S. Savings Bonds. Could it be arranged?

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Today there are more Payroll savers than ever before in peace time. Look up your State Director in the phone book or write: Savings Bonds Division, U. S. Treasury Dept., Washington, D. C.